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ORIGINAL ARTICLES.

THE TREATMENT OF CUTANEOUS CANCERS.[1]

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THREE of the recent theories of the etiology of cancer are at present claiming more than passing attention throughout the scientific world, each having its plausible side and each its warm advocates. "Asymmetric Cell Division in Cancer and its Biologic Significance," is the title of a thesis by Hanseman, wherein the theory of indirect cell division is advanced. The second theory, which has a great many advocates who differ slightly, however, as to details, supposes that an intracellular or intranuclear parasite (according to some, a coccidium; to others, a psorosperm, and to still others, a gregarina) infests the tissues, and through its presence induces a lawless growth of epithelial and connective-tissue elements. The parasitic theory is the third one. This supposes that the cancer parasites are animals, and that there are no epithelial elements at all in these neoplasms, the polymorphous bodies found in the growth being in reality not epithelial cells but the parasites themselves, and that these parasites produce a toxic substance, known as cancroid, which is responsible for the so-called cachexia.

Such widely different ideas would seem to indicate that the final solution of the subject has not yet been reached. So far as the subject of this paper is concerned the treatment here suggested is equally applicable whichever of these theories is accepted. Cancer still remains one of the most dreaded and fatal diseases known to science. While this unfortunately is true, and while as yet no specific in the treatment of the disease has been discovered, on the whole the outlook is decidedly encouraging. More is known about the nature of cancer, macroscopically and microscopically, than was known even five years ago, and it is now treated more successfully every year. Some things which we have learned concerning it are of the highest importance and profoundly influence our present treatment. For instance, it is now almost universally held by all leading pathologists that cancer is primarily a local growth, and that all cancers can be cured if thoroughly removed before the epithelial cells have infiltrated the connective tissue and neighboring glands, for it is generally conceded that it is the proliferation and infiltration of the epithelial cells which causes cancer to invade other tissues and organs and become disseminated throughout the body. This being the case the only treatment which offers anything like a cure is the one which has for its object the early and complete removal or destruction of all the morbid elements.

Another important fact connected with cancer, which is also an unanswerable argument for its early and thorough removal, is its manner of growth. Non-malignant new growths, such as lipoma, chondroma, etc., originate from embryonic rudiments in an indirect manner as a result of an injury to the part; they are simple tissue-tumors and increase in size by continuous multiplication of existing cells, and as the tumor increases in size by centric growth, the tissues of the part in which it is situated are pressed upon until finally they become so compressed as to form a more or less distinct capsule within which the tumor is contained. Outside of this there is no infiltration of the tissues or peripheral extension growth. This capsule can easily be recognized, and the extent of an incision in a given case definitely determined, and we can know positively when all the tumor is removed.

A very different condition of affairs obtains, however, in connection with the growth of cancer. It does not spread by centric growth, producing a sharp, easily-defined margin, but by peripheral proliferation and by an infiltration of the tissue to an extent not recognizable by touch or unaided sight. There is no capsule enclosing such a growth, and no well-marked limit to the infiltration. The increase of the tumor by continuous growth of the peripheral cells and infiltration of the surrounding tissues, not *en masse*, but gradually and without order, as regards the line of limitation, produces a condition entirely different from that produced by centric growth as occurring in the simple tissue-tumors.

A fibroma is due to the growth of fibrous cells, the process being almost identical with that which occurs in the healing of a wound. A lipoma is nothing more than a fibroma in some of the cells of which are deposited fat globules; the oil in the cell has simply pushed the nucleus to one side. A fibrous cell does not possess the power of infiltration as does the

[1] Read before the Georgia State Medical Association, April 21, 1897.

epithelial, and is, therefore, self-limiting, movable, and, as a rule, benign. In the one case the cells grow from the center and bulge out, and are dependent upon some form of external irritation; in the other, the cells grow on the surfaces and dip into the tissues, due to some irritation acting within the growth. In the one case the pathologic process is sharply defined and its limits restricted by the protective capsule; in the other, the diseased cells are unconfined and free to wander where they will.

The therapeutics of cancer are, to say the least, in a very unsettled state and in every way highly unsatisfactory. A great many remedies have been tried, and all have proved more or less complete failures. No surgeon would now think of relying on general constitutional remedies, except in cases where the knife or some good equivalent could not be used. If the etiologic factor of cancer is parasitic, we may hope that in the future some agent will be discovered which will kill the germ or make its habitat unfavorable to its continued existence, but at present our only reliance is in local treatment—the prompt and complete removal or destruction of all diseased tissue. To accomplish this end surgical means have been almost exclusively employed. In the removal of ordinary benign tumors surgery certainly offers us the best means and the greatest success, for in simple tumors the growth, when favorably situated, can always, and with absolute certainty, be removed by excision, but in cancer, in which there is no limiting membrane and no sharply defined guide as to the extent of the infiltration beyond the tumor-mass, other means than the use of the knife may more properly be indicated for its successful removal.

The object of this paper is to endeavor to emphasize this point. I wish to state here that I am a strong believer in the use of the knife in suitable cases, and frequently employ it. It has the advantage that, where an anesthetic is employed, it can be used without pain, the tumor can be removed quickly, and the wound heals rapidly. Again, there are certain portions of the body in which cancer may occur where employment of the knife seems to afford the greatest hope of success, as for instance, on the flexor surface of the forearm, the penis, and the scrotum. Unless seen early, in cases of cancer of the forearm and penis, amputation will probably offer the only relief. A great amount of tissue can be removed from the scrotum without injury to the patient, therefore the knife has decided advantages over any other form of local treatment for cancer of this locality, but in other situations, as the nose, cheek, or, in fact, any portion of the face, where the necessary amount of tissue cannot be removed without producing more or less mutilation and deformity, the knife should not be used. The treatment of cancer by the knife is very far from satisfactory. It is true that if all of the diseased tissue is removed by this means the tumor will not recur, but practically, this seems very difficult to accomplish. It is a fact that very frequently there is a recurrence of the disease after a few months or possibly a year or two. I have seen but few instances of skin cancer removed by the knife which have not recurred within two years. It is well known that local recurrences after knife operations nearly always begin as small, hard, and well-defined nodules on the very edge of the scar, being partly in the normal and partly in the cicatricial tissue. Attention has been drawn to this fact recently by a number of our most eminent surgeons, and they suggest that the operation should be of a more sweeping character.

It is difficult to remove a malignant tumor without the knife cutting into some portion of it, therefore, the blade must be infected by some of the epithelial cells, and it is easy to conceive that some of them may be left embedded in the healthy tissue in spite of careful antiseptic washing and closure of the wound after all of the original tumor has carefully been removed, but with the germ of the recurrent disease unintentionally sown in good soil. On the other hand, if a few of the scattered epithelia happen to be situated outside of the line of incision there is no inflammatory process to weaken or destroy them. There are a number of authentic cases of cancer being destroyed by the results of inflammation alone. It is no uncommon practice now to produce inflammatory conditions for this specific purpose, but in this day of asepsis and antisepsis the wound heals by first intention, and if a single cancer cell is left even at the margin of the wound it is not destroyed, and during the healing process, when an unusual amount of nutrition is furnished to the part, this epithelial cell is placed in a specially favorable condition to grow and increase.

These and other reasons would seem to indicate that the knife is not always the best means for the removal of malignant growths. There is no doubt, I think, that the employment of such escharotics as caustic potash, chlorid of zinc, and arsenious acid is fully as efficient as the knife in any case, and has decided advantage over it in many instances. I am sure that not a few will regard this as rather an extreme statement. I am fully aware of how the profession in general is prejudiced against those ignorant or designing charlatans who advertise themselves as "Cancer Doctors," "Cancer Specialists," etc. I fully share in this proper detestation of such quacks and their methods, but very few will dispute the

fact that even they do sometimes cure cancer, and that, too, in many instances without any kind of knowledge of the disease treated, or of the therapeutic action of the remedy employed. Because a certain kind of remedy or a certain treatment is employed by blatant quacks, is no argument that there is not good in it. The corner-stone of rational medicine is to accept facts wherever they are found.

My personal observation in the use of caustics in the treatment of cancer may be of but little value, as I have not treated many cases, and only those coming to a physician in general practice. I am indebted to Dr. A. R. Robinson of New York for much that is good in this paper. But for his teaching I am sure that I would have continued to advocate the use of the knife in the treatment of skin cancers, notwithstanding that when I have used the knife I have had more recurrences than cures. During the last four years I have treated fourteen cases of skin cancer with caustics, and in not a single instance have I seen the slightest indication of a recurrence. Five of the patients were operated upon from three to four years ago, three from two to three years ago, and the other six have been treated within the last two years. One of the number died from pneumonia three years after having been operated upon; the others are all living and in good health.

Caustics of various kinds have been employed for a long time in the treatment of cancers both by cancer quacks and the regular medical profession. I am satisfied that their use in this connection has not received a fair and impartial trial at the hands of the latter. Most physicians have condemned their use without a trial, or, if employed at all, it has been in a very crude and imperfect manner. To my mind, there are several good reasons why caustics should be given a full, painstaking trial in the treatment of skin cancers. In the first place, cancer is a most dreadful disease and fearfully fatal, and anything which offers a reasonable hope of cure should be welcomed gladly. In the second place, and if for no other reason, their use should be taken out of the hands of ignorant charlatans and placed in the hands of the regular profession, where they properly belong.

If the cure of cancer is dependent upon its early removal, the caustic treatment has an additional advantage over the knife, since a great many timid patients who shrink from a cutting operation, with a little tact upon the part of the operator, will readily consent to the application of a caustic paste. There is no doubt that some caustics have somewhat of an elective action, and all of them cause less destruction of tissue, and produce less deformity than does the knife. Again, if the products of inflammation have any influence in modifying or destroying the growth of cancer cells, the fullest benefit and advantage of it is obtained in the use of caustics.

These caustics are quite poisonous, and when employed in a careless or incompetent manner are likely to do great harm. Weak caustics, too, do infinitely more harm than good. By their use only a portion of the tumor-mass is destroyed by one application, and the resulting inflammation is slight and gradually loses itself in the surrounding tissues. This has the effect of simply stimulating the growth, and hence of causing a more rapid proliferation and infiltration of the epithelial cells than existed before the cauterization, but with such caustic agents as caustic potash, chlorid of zinc, and arsenious acid, the tissue can be destroyed to a greater or less extent and as rapidly as is desired.

As a result of the application of any one of these caustics there is complete destruction of the tumor-mass and an intense widespread inflammation which extends far beyond the limits where the knife would usually be employed. I am fairly well convinced that from the use of these caustics there is formed in the tissue cauterized a toxalbumin which is destructive to the cancer cells or to the parasites of cancer, if such exist. It may be the inflammatory process alone which produces the desirable results, but when enlarged lymph-glands at a distance from the cancerous tumor diminish in size after the caustic has been applied it is difficult to avoid the conclusion that such an agent must be present and active. The following is a case in point:

Mrs. M. H., aged fifty-five years, came to me about 3½ years ago with a recurrent epithelioma of the right breast, the original growth having been removed eight months previously in rather an imperfect manner. The axillary glands had not been removed as it was said they were not enlarged at the time of the operation. They were now enlarged, however, and I advised a second and more thorough removal of the tumor and glands with the knife. She firmly declared that she would rather die than undergo a second cutting operation. I then applied Marsden's paste and left it on for twenty hours, and in seven days the entire tumor sloughed out. The wound healed in about eighteen days. At the time I dismissed her by the most careful examination I could not detect a single enlarged gland in the axilla.

It is now more than three years since this patient received the treatment and there has not been a sign of recurrence. I have operated on two primary cancers of the breast since that time, with caustic potash, in one case the glands being slightly enlarged. The glandular enlargement entirely disappeared in about three weeks, and in neither case has there been anything but the most favorable result. In the near

future I intend to publish the results of treatment in other cases.

Each of the escharotics mentioned seems to have special indications peculiar to itself. For instance, if rapid work is desired, caustic potash is indicated; in extensive work, chlorid of zinc has advantages, and for sure, safe work, in the majority of cases, arsenious acid is the most desirable agent we can employ. Caustic potash quickly liquefies the tissues, and at one sitting a very large tumor can be destroyed. Its action, however, extends farther than the part to which it is directly applied, and its use is followed by marked inflammatory changes in the surrounding parts which may or may not lead to destruction of the tissue. If the latter occurs, a wound results as large as that usually made by a knife, but with care in its use the destruction of the surrounding tissue from the intensity of the inflammation may entirely be avoided, and only the tumor proper be destroyed. The amount of inflammation following the use of caustic potash is said to be a valuable guide as to the extent and amount of the epithelial infiltration. This seems plausible, since the inflammation must depend upon the vulnerability of the tissues, and the vulnerability upon the condition of nutrition of the part, and this condition is directly the result of circulatory disturbance, caused by the extent of infiltration by the epithelial cells. The agent is a valuable one when positive results are desired during one sitting. As a rule, it leaves more cicatricial tissue than either chlorid of zinc or arsenious acid. Its use is contraindicated near the eye or upon the nose. Its application is attended by much pain, but a general or local anesthetic can be employed, and in this respect it has no disadvantages as compared with the knife.

Chlorid of zinc as a caustic may be used in stick form, in solution, or in a paste. It causes more pain than either caustic potash or arsenious acid. Chlorid of zinc is not thought to have any decided elective action for pathologic tissue, but destroys both normal and pathologic tissue with an almost equal degree of rapidity. On account of its slower deliquescence and slower action, it has some advantages over caustic potash. In epithelioma of the roof of the mouth, of the lip, or when situated near the outer or inner canthus of the eye, on the lid, a pointed stick ot chlorid of zinc may be used more effectively and with greater precision and safety than any other caustic. Caustic potash or any form of caustic paste is apt to cause too much inflammation when used near the eye, and is not enough under the control of the operator. A fifty-per-cent. solution of the chlorid of zinc may be injected into any desired portion of a cancerous growth, or a paste may be employed for its destruction. Bougard's paste is one of the best that we possess in the treatment of small cutaneous cancers. It is prepared as follows:

℞	Wheat flour } aa Starch }	. . . .	ʒi
	Arsenious acid	. . . .	gr. x
	Hydrarg. sulph. rub. } aa Ammon. mur. }	. .	gr. xxxv
	Hydrarg. bichlor.	. . . .	gr. iv
	Zinc chlorid (cryst.)	. . .	ʒi
	Water (hot), about	. . . .	ʒi ss.

(Ten grains of cocain muriate may be added to this.)

The six first-named ingredients should be mixed together and finely powdered in a glass mortar, the zinc chlorid, after being dissolved in the hot water, then being added and the whole rapidly mixed by means of a pestle. It should then be allowed to stand for twenty-four hours, when the paste will be ready for use. It is spread thickly on a piece of muslin and left upon the part for twenty-four hours. If the first application is not positively successful, the second should be made within a few days. This paste can be applied to a large surface at one time, as there is no danger of poisoning. If the surface of the tumor is hard, or the epidermis unbroken, it is better before applying this, or any other form of paste, to lightly apply a stick of caustic potash. The action of the paste is then more prompt and sure. After the tumor has sloughed out, which will occur in from three to ten days, the wound may be treated with any simple protective salve or antiseptic dressing.

The caustic above all others which has the widest range of usefulness, and from which the most satisfactory results in the treatment of cutaneous cancers are derived, is arsenious acid. It is usually employed for this purpose in the form of a paste, known as Marsden's paste, and consists of equal parts by weight of arsenious acid and powdered acacia, rubbed well together, with enough water added to make a paste about the consistency of rich cream. This should be spread upon muslin or rubber plaster in a layer about one-quarter of an inch thick and applied so as to extend beyond the edge of the visible tumor in every direction. It should be kept in position for from fourteen to twenty hours. From four to six grains of cocain should be incorporated with each dram of this paste. It is not as good as chlorid of zinc in cases of cancer of the lip or of mucous membranes on account of the danger of poisoning by absorption. The fact that the paste may be applied to the healthy skin without producing destructive results shows that it has an elective action for diseased tissue. It acts quicker and with less pain than the chlorid of zinc. To my mind, Marsden's paste is preferable to all other forms of caustics and may be

regarded as almost a specific for skin cancers, if they are treated early. The wound which remains should be treated as in the case of chlorid of zinc. If the tumor is large, or the wound does not heal kindly after a reasonable length of time, a second or even third application of the paste should be made. To apply these caustics successfully demands a certain amount of experience, but this any one can acquire after applying them two or three times. The greatest cause of failure in their use is the neglect to treat the case energetically until thoroughly satisfied that all diseased tissue has been destroyed.

THERMIC FEVER AND HEAT PROSTRATIONS.[1]

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THERE probably is very little, if anything, new that can be said regarding the effects of high atmospheric temperature upon the human body, but as the summer of 1896 demonstrated that we are by no means removed from its dangers, and as my opportunities for observing its effects during July and August were rather unusual in their completeness, it has seemed that possibly it might be instructive to review the condition in connection with a few typical examples. The cases to which I refer, thirty-two in number, occurred during the service of Dr. G. R. Butler at the Methodist Episcopal Hospital, Brooklyn, and it is by his courtesy that I am permitted to report them.

The epidemic character of the outbreak of heat prostration and its compression within the limits of a few days, produced a very vivid impression, which would have been entirely lacking in the presence of only a few isolated cases. This, perhaps, cannot be better illustrated than by the fact that at one time at the gates of the hospital there were two ambulances, one ice cart, and a delivery wagon, each containing one or more patients. For a few days the rush was so great that many of the patients who had suffered a mild attack, after remaining at the hospital for a few hours were allowed to go home, no record being kept of them. It would be natural to ask why, at this particular time, there occurred such a large number of cases attended by such fatal results. The high temperature alone does not explain it, because, as is well known, people living upon the high table-lands of Abyssinia and in the dry regions of Texas are much less liable to attacks than those living in the lowlands and in sections bordering on the seacoast. A dry atmosphere increases tolerance of high temperature, while moisture diminishes it. During July and August, 1896, in addition to the high temperature, there was an unusual degree of humidity, rendering rapid cooling of the body impossible. Adding to these conditions the accepted predisposing causes of heat prostration—race, excessive bodily fatigues and intemperance—the etiologic factors are about complete. These conditions in combinations exhaust the so-called inhibitory heat-center so that it soon becomes greatly weakened, if not temporarily destroyed. The existence of this distinct heat-center in the brain, however, is quite seriously questioned by many accurate observers, while there are others, among whom is Gower, who give apparently satisfactory evidence of the existence of a center which does have the regulation of heat as its function.

Ott speaks of thermotaxic centers in connection with typhoid fever. Concerning heat and fever in general, some interesting experiments with rabbits, both fasting and in normal condition, are reported by Nebelthau,[1] the principal conclusions being as follows: (1) In fever there may be an increase both of production and loss of heat; (2) there is yet no proof that fever is ever due to retention of heat; (3) regulation of temperature is not wholly abolished in fever; (4) the normal proportion between the amount of heat lost by evaporation of water and by radiation and conduction is not altered in fever. Laveran[2] (quoted by G. N. Stewart) attempted to elucidate the cause of sunstroke by observing the effect of high temperature on dogs at rest and doing work. The latter were much sooner and more seriously affected and the rectal temperature rose more rapidly. At the time of death the rectal temperature always was at least 45.5° C. Death was not due to coagulation of myosin or to asphyxia. The heart sometimes began to beat again after the chest was opened, but transfusion of blood never restored the animal. The only explanation of the fatal result seemed to be in the action of heat on the nervous system, perhaps paralysis of the ganglia of the heart. The conclusion reached by Wood is that heat exhaustion with lowered temperature represents a sudden vasomotor palsy, or a paralysis of the center in the medulla. On the other hand, thermic fever is held to be due to paralysis under the influence of the extreme external heat of the center in the medulla which regulates the disposition of the bodily heat. Owing to this disturbance more heat is produced and less given off than normally. (Osler.)

Males, owing to their mode of life, are more sus-

[1] Read before the Kings County Medical Association, February 9, 1897.

[1] *Zeitsch. f. Biol.*, page 293, 1894.
[2] Pflüger's "Archives," Bd. lviii, 229.

ceptible to heat influences than females. The greatest number of cases of sunstroke or prostration occur in those between twenty and fifty years of age. That excessive bodily fatigue is a very important etiologic factor is well shown by Barclay in his account of a forced march of more than eleven hundred miles, during the very hot season, by the English troops in India. No cases of heat exhaustion occurred until more than nine hundred miles had been traversed, and the men were greatly emaciated from lack of proper food. During this period the temperature at times was as high as 105° F. at midnight. Cases of prostration then began to occur rapidly, and before the weather became cool many of the men died.

Intemperance, or even the moderate use of alcohol, especially in those whose occupation requires a considerable amount of bodily exertion, is an important factor. With but few exceptions, all the male patients treated at the Methodist Episcopal Hospital, for sunstroke or prostration, had used beer and whisky freely, two of those who died developing delirium tremens after the thermic symptoms had almost entirely subsided.

Prostrations by heat should be divided into three classes: (1) Simple heat exhaustion, in which there is a normal or subnormal temperature from the beginning; (2) cases in which the temperature does not rise much above 101° or 102° F.; and (3) cases of true sunstroke, in which the temperature ranges from 106° to 113° F., and in which partial or complete insensibility is present, convulsions or complete paralysis of the voluntary muscles being a prominent symptom. Martin of Paris classifies these cases: (1) As a cerebrospinal type, characterized by symptoms of intense congestion, injection of the conjunctivæ, convulsions and coma; (2) as a cardiac type, in which there is pallor of the face and profuse sweats, death occurring from arrest of the heart; and (3) those of a pulmonary type, in which, in addition to other symptoms, there is anxiety, dyspnea, and asphyxia. The few cases which I report herewith are illustrative of these types.

CASE I.—A plumber, twenty-two years of age, was overcome while walking in the street. On admission his temperature was 98.2° F., respirations, shallow but regular, 20 to the minute and pulse small, rapid, and feeble, 120. His pupils were dilated but did not readily react to light. He was rational, with a tendency to drowsiness, had considerable headache, and was very weak, especially in the legs. The extremities were cold. After thirty-six hours he had responded to simple medication and the external application of heat, and was discharged cured.

CASE II.—An iceman, twenty-five years of age. He had always been a hard worker and a moderate drinker. He had not felt well during several days previous to the attack but had continued at work. He had been unable to sleep during the previous two nights, and six hours before admission to the hospital had begun to feel dizzy and weak. In spite of this he had been exposed to the hot sun all the morning. On admission, his temperature was 97° F., respirations shallow and rapid, and pulse irregular and feeble. His pupils were dilated. He was extremely prostrated, being unable to speak aloud, his muscles were relaxed, and his skin dry and cold. He was discharged, cured, on the second day.

CASE III.—H. R., aged forty, single, always had been an unusually heavy drinker, at times drinking as much as one and one-half pints of whisky during twenty-four hours. During the three or four days previous to his admission he had drunk to excess and had taken but little food. When brought to the hospital he was unconscious, his temperature being 110° F., pulse 130, and respirations labored and shallow. His pupils were contracted to a marked degree, face pale, skin hot and covered with profuse perspiration, which had a urinous odor, and all of the voluntary muscles relaxed.

He was immediately placed in a cold bath for fifteen minutes, and half an hour later regained consciousness, his temperature then being 101° F. The following day he appeared to be doing well, but toward evening his temperature rose to 102° F. and he became violent. During the night he developed well-marked symptoms of delirium tremens and died shortly afterward.

In contrast to the first two cases is the recorded history of a powerful man working in a hot, confined space at the Philadelphia Exposition in 1876. He was attacked without warning and became violently delirious. His temperature was 95.2° F., pulse rapid and fluttering, muscular relaxation was complete, and the surface of the body was covered with a profuse cold sweat. Boudin reports a series of one hundred cases of thermic fever occurring on board a French war-vessel, a majority of the men being attacked while lying in their bunks. Bonniman says that in India the greatest number of cases occur in those who are not exposed to the sun.

The diagnosis of heat prostration is ordinarily not difficult. The usual symptoms are extreme prostration, restlessness, and, occasionally, slight delirium. The body may be cool and dry or bathed in profuse perspiration. The pulse is small, rapid, and feeble, the respirations weak and shallow and the temperature subnormal, normal, or slightly above. In thermic fever to these symptoms are added unconsciousness, complete muscular relaxation, or severe tonic or clonic spasms, and more or less interference with respiration.

Guiteras says that in certain of the Southern States there exists an affection known in some localities as

"country fever," and in others as "Florida fever," which sometimes is mistaken for malarial or typhoid fever. He considers it to be entirely distinct from these diseases, and has given it the name of "continued thermic fever."

There were but few sequelæ to the cases treated at the Methodist Episcopal Hospital, and these were unimportant. The literature relating to this subject, however, is quite full, and a large number of conditions are mentioned to which thermic fever is assigned as the predisposing cause. Among these may be mentioned intolerance to the sun's rays, difficulty of speech, meningitis, general or local muscular tremor, wrist and foot drop, muscular atrophy, changes in electrical reaction of muscles, long-continued acceleration of pulse and respiration, impaired nutrition, indigestion and anemia, headache and vertigo, tenderness of the spine, epilepsy, hemiplegia, cutaneous anesthesia or hyperesthesia, enfeebled memory, deafness, and a variety of heart lesions, both organic and functional. (Barlow.)

The treatment of these patients, except in the case of those having a subnormal temperature, consisted in the application of cold in the form of ice-caps, abdominal coils or the ice-water bath, and the administration of strychnin, atropin, digitalis, sparteïn, or nitroglycerin, according to the indications present. All patients with a temperature of 103° F. or more were given a cold bath. This was administered as follows: As soon as possible after admission the patient was stripped, wrapped in a sheet, and lowered into a movable bath-tub containing water in which was floating large pieces of ice. Cold compresses were applied to the head, and his body was then vigorously rubbed with ice, this being kept up until the rectal temperature had been reduced to 102° or 101° F., or until symptoms of shock developed, when he was removed from the bath, wrapped in a dry sheet, and put to bed. The rectal temperature was taken every half hour, and the bath was repeated at intervals, if necessary, until the temperature showed a disposition to remain near the normal point. As a rule, it dropped from one to three degrees each time the patient was taken from the bath. In a majority of instances consciousness was regained while in the bath or immediately afterward. It is very essential in carrying out this treatment that a sufficient number of assistants be available, for the constant changing of the compresses, and the rubbing of every portion of the body with ice is of very great importance.

In a few instances the cold bath was tolerated for a short time only, and one patient had to be removed from the tub immediately after immersion on account of the shock produced. Another patient whom the bath did not benefit, and who subsequently died, had two intestinal hemorrhages, which possibly might have been prevented had active bleeding been resorted to, a procedure which Weir Mitchell mentions as having been successfully adopted in a case of his own.

Antipyretic drugs were not administered. These never should be relied upon as a substitute for the application of cold in these cases. The number of patients treated was thirty-two and the number of deaths nine, two of the patients being moribund when admitted. The percentage of recoveries is somewhat larger than that reported by Osler in connection with cases occurring at the Pennsylvania Hospital, Philadelphia, during the summer of 1887.

ON THE OCCURRENCE OF PRIMARY TUBERCULOSIS OF THE KIDNEY, WITH SPECIAL REFERENCE TO A PRIMARY MILIARY FORM.

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The mode of infection in these cases is a most interesting problem, and has long been a fruitful source of discussion. In many cases it is exceedingly obscure, and cannot be removed from the realms of pure conjecture. Three possibilities only suggest themselves: (1) Hematogenic infection. (2) Ascending infection from the lower urinary tract, either by means of the urine, through the spread of the disease along the ureter, or by the conveyance of the virus through the lymphatics. (3) Extension from similar processes of neighboring organs. The latter, if it occurs at all, must be a very rare mode of infection. The kidney notably is exempt from participation in the disease of neighboring structures, as of the vertebræ, adrenals, etc. The capsule probably acts as a protecting membrane; witness the non-implication of the kidneys in tuberculosis of the suprarenal bodies, even when the latter, as it sometimes does, gives rise to a perinephritic abscess. The mode of infection must, therefore, be hematogenic, or the kidney must become implicated by an extension of the process from below upward. There is clear evidence in support of both views. We thus recognize that the caseous variety of tuberculosis of the kidney may either be a primary or a secondary affection, and that there may occur both an ascend-

ing and a descending tuberculous infection of the genito-urinary tract; and, further, we must allow that various parts of the tract may be simultaneously involved. There can be no doubt that in the case reported by us the infection was hematogenic, and this also is doubtless the most frequent mode of infection in the ordinary primary caseous or local tuberculosis of the kidney, there subsequently ensuing a descending infection of other parts of the lower genito-urinary tract. It thus appears evident that a primary tuberculosis of the kidney, similarly as primary tuberculosis of the bones and lymph-glands, may occur by hematogenic infection without any demonstrable tuberculous lesion in any other part of the body. Of course, one can hardly exclude the possible presence of a small tuberculous focus which may have eluded detection. The interesting question under these circumstances is, In what manner do the bacilli gain access to the body and enter the blood-vessels? One naturally has recourse to the experiments which serve to prove that the bacilli may enter the body without setting up lesions at the port of entry. We further recall the symptomless course of many unsuspected cases of tuberculosis of various structures—of the tonsils, bronchial and cervical lymphatic glands. Infection of the latter, it appears from some recent investigations, may occur by means of totally latent tuberculosis of the teeth. Again, the tubercle bacilli have been demonstrated in the renal glomeruli before any cellular exudate has occurred. But, despite various facts and theories, the mode of infection of some cases of primary tuberculosis, not only of the kidney, but also of other organs, is exceedingly obscure. At times the question is impossible of solution.

While from the appearances of a kidney, removed either *post-mortem* or by operation, it frequently is relatively easy to determine the route of infection, in a not inconsiderable proportion of cases this is a matter of very great difficulty, and is at times impossible. Disseminated or secondary miliary tuberculosis, and the primary form of miliary tuberculosis such as we report, are readily recognized as instances of hematogenic infection. When, however, more or less of the entire urogenital tract is affected, it requires a careful consideration of the relative stages of the various lesions found at the more remote points of the disease to determine the route of infection; to determine whether or not the general implication is an instance of descending or of ascending infection; in the latter case, of course, we can but speak of a secondary involvement of the kidney. A more advanced stage of the disease about the trigone or fundus of the bladder, for instance, and relatively little implication of the kidney, and that limited to the pelvis or papillæ, would be clear evidence of an ascending infection. Again, extensive destruction of the kidney, more especially toward the cortex, with some slight involvement of the ureter and a healthy bladder, is sufficiently characteristic of the descending variety of the infection. Attention might here be drawn to the fact that whereas a few years ago the generally accepted opinion was that the kidney involvement in caseous tuberculosis was usually an instance of ascending infection from the lower urogenital tract, the trend of recent opinion is that the primary focus is commonly situated in the kidney, the other organs of the genito-urinary system becoming secondarily involved.

Not rarely both kidneys are affected, though one is generally found to be in a more advanced state of disease than the other. This bilateral implication may be the result of simultaneous infection, or, as is most probable, usually the second kidney has become infected from the first by a descending and subsequent infection. The tuberculous disease of one kidney gives rise to a descending infection of its ureter, and finally the bladder, the mucous membrane of which, especially that about the trigone and fundus, becomes the seat of miliary tubercles or becomes infiltrated or ulcerated. The ureter of the healthy kidney becomes diseased and its mucous membrane thickened. This results in obstruction of its lumen and consequent hydronephrosis, which shortly becomes purulent. Thus, the tuberculous infection is presented to the pelvis of the healthy kidney, which soon succumbs to the attacks of the morbific agents. It is believed also that an urethral obstruction occasioning retention of urine may result in such disease of the second kidney, and this sometimes without affecting the bladder, the mucous membrane of which is notably resistant to the injurious influences of disease germs.

Primary tuberculosis of the kidney may occur at any age, but is more frequent in adult life and old age. Hamill, who has recently made a very exhaustive study of the disease as it appears in early life, and who has reported a case in one of the youngest patients on record—a child aged seven months[1]—remarks that "it is relatively uncommon in childhood and exceedingly rare in infancy." In the young the conditions probably are not identical with those found in later life. It appears that more males are affected than females. The etiologic factors are those of tuberculosis in general.

As already remarked, disseminated miliary tuberculosis of the kidney may not and usually does not give rise to any special symptoms, being but part of a general process. It is also true that primary miliary

[1] *International Medical Magazine*, 1896.

tuberculosis, as well as the ordinary variety of primary or caseous tuberculosis of the kidney, may persist for a considerable time without exhibiting any clinical manifestations of its presence. Rosenstein is authority for the statement that symptoms develop only when the mucous membrane of the pelvis and calices or ureter become the seat of inflammation; or when the caseous tubercles rupture into the pelvis; but, as evidenced by the case reported by us, even the implication of the mucous membrane of the pelvis may not give rise to any obtrusive indications. Rosenstein further asserts that the initial symptom of all cases (at least in all of the considerable number observed by him) was dysuria.

Laroche, a recent observer, feels justified in dividing all cases, according to their initial manifestations, into three classes—those which commence with hematuria, those which commence with pain, and those which commence with vesical symptoms; but, as further instanced by the case reported by us and by others, the condition may not be suspected until the accidental discovery of pus in the urine, during a careful examination of the renal secretion, suggests to the examiner the wisdom of examining the sediment for tubercle bacilli.

The symptoms which, developing, attract the attention of the patient usually are, in the beginning, either lumbar pain, turbid urine, hematuria, or, what the patient is more likely to observe, frequent and painful urination and hematuria. Any of these may occur alone, or there may be various combinations. Guyon was wont to refer to pus in the urine and frequent and painful micturition as the common symptomatic triad of urinary tuberculosis.

Lumbar pain may alone be present, and may either be spontaneous or provoked. The spontaneous pain may be very slight, amounting only to a so-called loin tire, or it may be very severe. It usually is limited to the lumbar region; and is present on, or at least is more severe on, the diseased side. It is not ameliorated by repose nor aggravated by movement. Sometimes the pain is lancinating, and even when so it may be confined to the lumbar region, or it may exhibit radiations in the direction of the ureter or into the testicle. Again, veritable crises appear at irregular intervals. They are of variable intensity and duration, and usually develop without manifest cause. They much resemble attacks of nephritic colic. The pain is generally aggravated by pressure—that is, by an examination of the renal region; but pain provoked only by an examination, at other times being absent, must be a rare indication of primary tuberculosis of the kidney.

Vesical and urinary symptoms have for a long time been known to accompany various diseases of the kidney, despite the integrity of the bladder, and in primary tuberculosis of the kidney they are common. Frequent and painful micturition are common initial symptoms. At times pain may be intense, and situated at the neck of the bladder and accompanied by aggravated vesical tenesmus. Frequent urination, by night as well as by day, is often the first obtrusive symptom, even before the appearance of pus or blood appreciable to the eye in the urine. It often co-exists without painful urination, so that the patient may complain only of the mere annoyance of the great frequency of the act of urinating.

The presence of blood in the urine, often only to be detected microscopically, is probably the most frequent initial symptom, and may be present for a long time without any other manifestation of the disorder. Its production is readily accounted for by the fact that the bacilli, gaining access to the glomeruli, there set up a congestion which speedily progresses to rupture of the blood-vessels and consequent appearance of blood in the urine. It not only occurs early, but may continue also during all stages of the affection. Hematuria varies much in amount, and usually occurs without provocation—that is, it develops as it also ceases—spontaneously. The time of its occurrence and its amount are uninfluenced by movement or repose. It may be accompanied by severe pain, but even when profuse it is generally painless.

An examination of the kidney region often affords important diagnostic data in a suspected case. A kidney increased in size and painful is valuable evidence of the condition. The kidney unaffected with the tuberculous process may be enlarged from compensatory hypertrophy, but it is not painful. On percussion the area of kidney dulness is found to be enlarged; to facilitate the limitation of this area the employment of auscultatory percussion by means of the binaural stethoscope or the phonendoscope may be of value. Careful and thorough bimanual palpation alone will commonly enable us to distinguish enlargement, especially when the right kidney is involved. A kidney increased in size and painful may be observed very early in the disease. Later, there may be bulging of the loin and a tumor in the abdomen. The latter, depending upon the state of the pathologic processes in the kidney, varies much in size and other characteristics. The general conformation of the kidney is usually retained, but the tumor-mass may be very voluminous from a pyonephrosis consequent upon an obstruction of the ureter. If the several renal cavities reach the surface of the organ, the tumor-mass may feel bosselated. It may be resistant to pressure—that is, it may be hard or firm—or it may be elastic or fluc-

tuating. It may be so exquisitely painful to pressure that a satisfactory examination cannot be accomplished without the use of an anesthetic, which is usually contraindicated.

The most important symptom of the disease is the specific alteration of the urine. The characteristics of the urine are the reflection of the renal condition, and when a direct examination of the organ leads to indefinite results an investigation of its secretion furnishes positive signs. The urine may vary in amount. In the initial stages polyuria with frequent urination may be the sole symptom. Later, the quantity of urine depends in a great measure upon the state of the renal parenchyma. With destruction of the secretory tissue the urine diminishes in amount, but with an associated cirrhosis of the other kidney polyuria would be usual. The polyuria frequently is intermittent, and commonly is excessive after the removal of an obstructing particle from the ureter. The specific gravity of the urine generally is normal or somewhat subnormal. With marked polyuria it is of course very low. The reaction is acid. The urine is usually turbid when voided, but not infrequently is clear, and this sometimes is said to be especially the case during the painful crises, following which marked turbidity supervenes. Again, after turbid urine has been voided for a while it may suddenly clear and remain without sediment for some time. A sediment sometimes is deposited immediately upon the urine being voided; again, it does not deposit for some little time This consists of pus, blood, epithelium (occasionally casts), connective tissue, elastic fibers, and detritus. Cholesterin plates, crystals of calcium carbonate, phosphate, and oxalate are sometimes found. The quantity of pus is variable, as also is the albumin, which, with the presence of pus, is of course always found, and in amount depends upon the pus and blood. With parenchymatous disease of either the tuberculous or the other kidney the percentage of albumin increases. Tubercle bacilli are always demonstrable in the sediment, at some time in the course of the case.

As the disease progresses constitutional symptoms develop, but it is remarkable how extensive the kidney disease may become before they manifest themselves. The patient, from the first somewhat pallid, with perhaps little loss in flesh, gradually grows weak and finally emaciated. There is present anorexia, with increasing anemia, and an evening rise in temperature. The patient eventually passes into a condition of decided cachexia, and death may thus occur without extension of the tuberculous process beyond the genito-urinary tract.

As illustrating how insidious in onset and symptomless in at least a portion of its course tuberculosis of the kidney may be, the following case, occurring in private practice, is of considerable interest. In this, with the absence of the commonly observed frequent urination and hematuria (at least macroscropic), the first indication of any departure from health was the accidental discovery of pyuria.

W. R. S., male, aged thirty years, a dentist; weight, 145 pounds; family history good. Although he never had been robust, his health had always been fair. He was subject to "colds." He consulted Dr. Stewart for the first time during October, 1896, for the purpose of ascertaining the cause of the presence of albumin in his urine. Two and one-half years before he had taken out an insurance policy in a prominent company. At that time no abnormalities of the urine were noted. Six months before he came under observation he was insured in another and less prominent company. At this time, also, an examination of his urine was made, although by an examiner of less note than the first one. Shortly before consulting Dr. Stewart the patient desired to increase the amount of his life insurance. He was told by the examiner for the company first referred to that it would be impossible at that time, as his urine contained albumin.

A specimen of urine voided for examination was found to contain considerable pus, with albumin in amount only to be accounted for by the presence of the pus. The patient then recalled that for several months past the urine had commonly been turbid on voiding. To this he had not before attached significance. The patient's general health was good. In appearance, although well nourished, he was somewhat pallid. An examination of his blood disclosed a minor grade of anemia—hemoglobin, 65-per-cent.; erythrocytes, 4,000,000; no leucocytosis. There had been no loss of flesh, and his health, save for occasional slight attacks of bronchitis in winter, had always been good. Some five years previously he had had more or less bladder irritability, and this had persisted as a quite constant symptom for perhaps two years. The indications pointed to a mild chronic cystitis, for the development of which he could offer no explanation. He had not had gonorrhea. The bladder trouble, which at no time had been more than slight, had entirely disappeared about three years before he came under observation, by the use for a short time of suppositories consisting of belladonna, iodoform, and cocain. His health since had been very good. He had taken a great deal of outdoor exercise, chiefly awheel. He was absolutely symptomless when seen for the first time for his present ailment. Irritability of the bladder was entirely absent, and had been persistently so for the past three years. He never rose at night to urinate, and rarely passed water over three times during the twenty-four hours. Hematuria had never occurred to his knowledge. The testicles and their appendages were to all appearances normal. There was no tenderness about the neck or other palpable portions of the bladder. The kidneys were not palpable, and tenderness in the region of their location,

even on firm pressure, was absent. The lungs and heart were normal.

The case was regarded as one of probable tuberculosis of the kidney, and a search in the urine for the tubercle bacilli was at once instituted. As a matter of routine, specimens of the urine were examined systematically in Dr. Stewart's laboratory, both by himself and Dr. A. A. Ghriskey, twice weekly, for seven weeks before tubercle bacilli were found. They were at last discovered by Dr. Ghriskey after their detection had been almost despaired of. At the end of this time, in the first specimen prepared, in one field only, a very large number were found in good-sized clumps, and others isolated. No other fields contained them. Evidently, those encountered were from a small shred of tubercle which had escaped into the urine.

The amount of urine voided, measured during several days at intervals, was found to run constantly between 1200 and 1500 c.c. Although turbid on voiding, it always became clear on standing. Specimens of the day's urine deposited a considerable sediment, consisting solely of pus. That passed on arising in the morning commonly contained pus in much less amount. The urine was always of acid reaction, of normal color and specific gravity, and the twenty-four hours' output habitually showed normal urea for body-weight and diet. Albumin was present only proportionately to the amount of pus, from which it was evidently derived. Microscopically, pus-cells abounded. Erythrocytes and bladder epithelium were not noted. Casts, in the many examinations made, were never encountered.

Thermometric observations, made twice daily in this case for over a month, showed no afternoon or evening rise of more than half a degree.

A diagnosis of presumed tuberculosis of the pelvis of the kidney was made and the patient kept under steady observation. During this time, as narrated, a search for tubercle bacilli was being made. The treatment consisted of a nutritious diet, fresh air, and a good deal of rest in recumbency throughout the day. Guaiacol benzoinate was employed internally, although not with any expectancy of benefit. Rather large doses were at first taken, resulting in mild toxic symptoms, the chief of which was a tendency to persistent chilliness, which ceased on discontinuance of the remedy. During the time it was being taken in full doses, on undue exposure to wet and cold, a chill occurred, followed by soreness in the region of the left kidney. When seen, the second day after this was experienced, there had been some diminution in the amount of urine voided (the quantity at this time not being measured). There was also a perceptible though slight fulness evident in the loin anteriorly and laterally. The loin was somewhat tender on pressure. This was the only indication of hydronephrosis which had ever occurred. It was not repeated while he was under observation. Drinking freely of hot lythia water, and the employment of dry cups, followed by a poultice, caused a prompt subsidence of the symptoms.

The patient was under observation about three months, and, although now no longer under Dr. Stewart's care, is occasionally seen. Immediately on finding the tubercle bacilli in the urine the patient was urged to submit to a cystoscopic examination. The intention was to make an inspection of the bladder and to attempt catheterization of the ureters, in order to determine if the process, as was supposed, was limited to one kidney. If this suspicion was confirmed surgical interference was contemplated. But to the cystoscopic examination the patient would not consent, although the necessity of it was persistently laid before him, he being given to understand that no remedy could be curative of his condition. For this reason he consulted another physician, who held out to him greater promise of relief by drugs.

In this case the indications strongly pointed to a tuberculous pyelitis of one kidney, presumably the left. The ailment was probably of recent origin. It was unaccompanied by any indication of genito-urinary implication. The bladder symptoms, which were present several years previously, were of themselves highly suggestive, but should not be accorded undue weight, as they were not accompanied by any signs of renal derangement, the latter not developing until three years after the subsidence of the symptoms of vesical irritation. During this time the man had enjoyed good general health, and two examinations of his urine for life insurance had failed to disclose any indications of abnormality.

The diagnosis of primary tuberculosis of the kidney, particularly in the early stages, is frequently a matter of the greatest difficulty. The diagnosis may be at times most positive and again most uncertain. As in the two cases reported by us, the disorder may develop entirely without subjective symptoms. In the first case the tuberculous disease became engrafted upon a kidney the seat of chronic inflammation, and it was the presence of pus alone which suggested the wisdom of examining the sediment for tubercle bacilli. In the second case the first indication of abnormality was the accidental discovery of albumin in the urine when the patient desired an increase in his life insurance. The albumin was found dependent upon pus, and this again led to the examination of the sediment for tubercle bacilli. In this case it was only the persistent and frequently repeated examina-

tions for a period of almost two months which were finally rewarded by their detection. We cannot, therefore, in the diagnosis, too strongly accentuate the suggestiveness of the presence of pus—even in very small amount—in acid urine. The negative result of the examination of the urinary sediment for bacilli is not evidence of freedom from tuberculous disease. The examinations must be frequently and persistently made. The positive evidence only is of certain diagnostic importance. We confidently believe that the systematic, careful, persistent, and frequently repeated examination of the sediment of urine containing pus, even in small (microscopic) amounts, would more often permit of the recognition of the class of cases to which we allude. Rarely the urine may not be acid. It may have been rendered alkalin by some complicating condition, such as a cystitis induced by the employment of an unclean catheter. In a case of Dr. Stewart's, in which both kidneys were involved in the tuberculous process and were converted into mere pus-sacs, the urine had steadily remained acid until a catheterization, subsequent to operation on one of the kidneys, induced a cystitis, with ammoniacal fermentation.

The absolutely diagnostic sign of renal tuberculosis is the discovery of the tubercle bacillus. Care must be taken not to confound the smegma bacillus with the tubercle bacillus—an error which has led to the removal of a kidney the subject of calculus only, but presumably the seat of tuberculosis. Although the staining peculiarities of these bacilli are in many respects alike, the arrangement of tubercle bacilli into masses and groups (and this especially occurs in tuberculosis of the urogenital tract), is quite distinctive. The differential characteristics existing between the smegma and the tubercle bacilli have been especially studied by Grethe and von Leyden. The smegma bacilli are more readily decolorized by acidulated alcohol, losing their stain in two minutes, while tubercle bacilli do not. The smegma bacilli do not stain by Gram's method; the tubercle bacilli do. Grethe advises staining a cover-slip preparation first with carbol fuchsin, in the ordinary manner, and then with a concentrated alcoholic solution of methylene-blue. The smegma bacillus is thus stained blue, and is in marked contrast to the tubercle bacillus, the red color of which is not interfered with. When, after persistent search, the tubercle bacilli cannot be detected in the sediment, small flakes of tissue being especially looked for as most likely to contain them, the question of diagnosis may be settled by injecting some of the sediment into the anterior chamber of the eye or into the peritoneal or pleural cavity of a rabbit or guinea-pig. Of less value is gelatin or other plate-cultures from the pus. The discovery of connective tissue and elastic fibers in the sediment merits careful consideration. While not diagnostic of tuberculous disease of the kidney, their presence still points to some extensive destructive disease in the kidney, and this is usually tuberculous or dependent upon a calculus. The suggestiveness of these is greatly increased when they are associated with degenerated particles of tubercles, which are so common in the urine and which generally appear as granular, amorphous masses. The diagnosis is further confirmed should there be present hematuria and indications of enlarged and painful kidney, lumbar pain, and vesicle irritability.

Tuberculous kidney converted into a pus-sac.

The evening elevation of temperature, as insisted upon by Rosenstein, cannot be so distinctive and essential a symptom as he would have us believe. In our second case the evening rise did not amount to more than the normal elevation, and in the first case the elevation which occurred might be regarded as dependent upon the other conditions present. However, an evening rise of temperature in association with acid urine containing pus is very suspicious of tuberculous disease. Confirming one's apprehension of a possible tuberculous disorder of the kidney is the discovery of similar disease of other parts of the genito-urinary system, as of the testicle, epididymis, vas deferens, seminal vesicles, prostate, bladder, ureter, and, in the female, the Fallopian tubes.

The presence of persistent lumbar pain, pyuria,

hematuria, and vesical symptoms all call for a careful investigation of the kidney. The impartial observer will hardly mistake the lumbar pain for a lumbago; nor should a pyuria with vesical symptoms be too long referred to a catarrh of the bladder. Frequent micturition alone or accompanied by hematuria, but without lumbar pain or other symptoms, is in itself very suspicious.

The distinction between calculary pyelitis or pyonephrosis and tuberculous disease, is at times a matter of some difficulty. Vesical irritability is common to both conditions, but the lumbar pain of calculus is usually of a duller, much more persistent character, aggravated by motion, and associated with attacks of renal colic in which the pain is agonizing, and radiates into the lower genitalia and into the thigh. When such attacks accompany tuberculous disease, they are generally much less intense. Hematuria is more severe in renal stone, and is often induced by exertion. Enlargement of the kidney is not so common, and only occurs when the stone becomes impacted in the pelvis or in the ureter, and this is usually late in the course of the disease. There then ensues a hydro- or pyonephrosis. The urine usually is highly acid in calculary disease, with a specific gravity normal or above; it usually contains, if the calculus be of uric-acid formation, an abundance of crystals of the same; if of calcium oxalate, similar crystals are likely to be present in excess. Casts are less frequent than in tuberculous disease, and the bacilli are, of course, not encountered. While good general health may be maintained for a long time despite the tuberculous involvement of the kidney, still the patient is more apt to show deterioration sooner with tuberculous disease than he is with renal calculus. For an exceedingly long time between the attacks of renal colic the patient's general health is excellent. In tuberculous disease, not infrequently some emaciation, anemia, night-sweats, loss of appetite, etc., develop rather early. The symptoms are sometimes indicative of vesical calculus, but from this the employment of a sound or the cystoscopic examination of the bladder readily differentiates. Both the renal and the vesical calculi may further be excluded by the results of a Röntgen skiagraph. Malignant disease of the kidney usually is easily eliminated from the possibilities. Frequent urination and hematuria are the only urinary symptoms common to both conditions, but they may be absent in malignant disease, and, if present, are apt to be prominent symptoms. The tumor generally grows very rapidly, renders the kidney firm to the touch, bosselated, and may lead to distortion of its shape. Sarcoma is the most frequent tumor, and it is in children that confusion is most likely to arise.

In all cases, and especially in women, in which such examination is now a matter of comparative ease, by the employment of the improved methods of Howard Kelly, a cystoscopic inspection of the bladder, and especially of the ureteral orifices, should early be carried out. In women, in addition, catheterization of the ureters is a matter of little or no difficulty, and may be essential to determine, by an examination of the urine from each kidney, the question of single or double involvement. Meyer holds that in a suspected case the use of the cystoscope will determine the diagnosis, even though repeated search in the urine for tubercle bacilli has been resultless.

Meyer[1] states that with involvement of but one kidney, by the cystoscope a permanently normal vesical mucous surface is seen with a single healthy ureteral opening. The orifice of the other ureter, however, is injected. "A number of circumscribed, clearly defined, inflamed areas of mucous membrane can be seen between it and the slightly hyperemic trigonum, leaving the interposed tissue unchanged in appearance." No other disease of the kidney or bladder presents a similar cystoscopic appearance, in Meyer's opinion.

The case, however, may be encountered before such a cystoscopic picture is evident. In any event, in addition to cystoscopic examination, catheterization of both ureters, when possible, should be accomplished to obtain separate specimens of urine. In its performance the chances of infection of the yet healthy kidney must be thought of and precautions taken to minimize the chances of such an accident.

Catheterization of the ureters in the male, unfortunately, is attended with great difficulty, and has been accomplished by few, either in this country or abroad. By these it has been done sufficiently often to indicate that, although not easy of accomplishment, it is at least, in experienced hands, practicable.

The prognosis in the vast majority of cases without operative interference is absolutely fatal. One can think of the possibility of the disease being limited to one kidney, the substance of which wastes and finally becomes the seat of "clinical but not anatomic recovery," while the other kidney remains intact. But such a possibility is very remote. The disease lasts for from six months to two or three years, as a rule, though instances of cases of much longer duration have been recorded. Death follows from cachexia, or it may be due rarely to uremia, from associated chronic nephritis, as in the case related by us.

The treatment of primary tuberculosis of the kidney, of whatever variety, is distinctly surgical; the

[1] THE MEDICAL NEWS, March 1, 1896, and May 1, 1897.

employment of tuberculin, the recently vaunted protonucleins, and drugs, such as guaiacol benzoinate, being without permanent benefit.

The surgical management of the case will not be here considered. Of the greatest practical importance is it, by careful hygienic and medical means, to place the patient, prior to operation, in as favorable a physical condition as possible, that any latent tuberculous process other than that in the kidney, such as might exist in the lungs, be not subsequently stimulated into activity through the depression attending operation.

Theoretically, apart from the ability to directly reach the morbid process and effect its removal, operation, the immediate effects of which are well understood, may not be without benefit on tuberculous lesions elsewhere, in a manner similar to that in which cure often results from mere incision in cases of tuberculous peritonitis. The most plausible explanation of the remarkable results obtained by mere exploratory celiotomy in cases of tuberculous peritonitis is that of Kischenski,[1] who regards the benefit or cure resulting due to the invariable post-operative leucocytosis. The beneficial effects in peritoneal tuberculosis, although in all probability so resulting, cannot be expected to repeat themselves in the same degree in tuberculous lesions elsewhere, for certain reasons (see, as to this, a paper by Vaughan, "Yeast Nucleinic Acid in Tuberculosis," THE MEDICAL NEWS, March 6, 1897, p. 300); yet much may be expected if the system is well fortified, prior and subsequent to operation, by supportive treatment. In these cases the free administration of the preparations of nuclein, and especially, as advised by Vaughan for use in general tuberculosis, of yeast nucleinic acid, may be of considerable advantage.

CLINICAL MEMORANDUM.

REPORT OF TWO CASES OF SYPHILIS, WITH REMARKS RELATIVE TO PTYALISM.

BY C. TRAVIS DRENNEN, M.D.,
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IN ascertaining the proper dose of mercury for syphilitic subjects one necessarily is governed by certain signs and symptoms, and one of these, which is almost universally watched for at the present day, is sensitiveness of the gums. The majority of general practitioners and syphilographers begin the treatment with small doses and gradually increase the amount of the drug each day, directing the patient to close the jaws and press the teeth firmly together at intervals, and when the slightest sensation of tenderness or soreness makes its appearance they desist from increasing the dose, as the point of tolerance has been reached, beyond which it will be dangerous to go. I desire to state as a result of long experience and observation, and in the face of recognized authority, that this soreness of the gums is a poor guide in the management of these cases, which fact the following reports will demonstrate:

A gambler, twenty-four years of age, a native of New York, came to me during the winter of 1895 suffering from tertiary syphilis. Four years before he had had a chancre, which was followed by the appearance of buboes in each groin, the left one suppurating. On this account he was confined to bed for nine weeks, during which time he was much troubled with nocturnal headaches, rheumatic pains, and fever, but there was no general eruption. He was treated for chancroids, but received no other treatment whatever. During December, 1895, after a night's debauch, a lesion made its appearance upon the glans penis. He at once consulted a surgeon, who proceeded without delay to thoroughly cauterize it, but the results were not such as he anticipated, inasmuch as the ulcer immediately became phagedenic, and in about ten days no less than two-thirds of the glans penis had been destroyed. On the second or third day after this lesion made its appearance, others appeared on different parts of the body, ranging in size from that of a one-cent piece to that of a silver dollar and even larger. These lesions were of the character of bullæ, and were followed in a few days by deep and ugly ulcers. He was at once put upon antisyphilitic treatment, but finding himself rapidly growing worse he left his home and came to the Hot Springs, and it was upon the 5th of January that I first saw him.

At that time he was markedly anemic, and was absolutely covered with ulcerations, some of them being an inch in diameter, and even larger. There were several large ulcers in the mouth and throat, and it was with much difficulty that he could swallow, his food having been limited during the previous two weeks to liquids. His weight was 113 pounds, as compared with his former weight of 138.

Inunctions of one-eighth of an ounce of mercurial ointment were employed for eight days and he was given thirty drops of the syrup of iodid of iron, well diluted, one hour after meals, and beef, chicken, or mutton broth, and as much sweet milk as he could take, four times daily. The throat was treated with antiseptics and the ulcers touched every other day with a twenty-grain solution of nitrate of silver, while an ointment containing ten grains of aristol was applied to the ulcers on the body. By the end of the first week desire for food had returned, and with it ability to sleep, which heretofore had been obtained by the use of hypnotics. The mercury was continued with most satisfactory results, for on the twenty-second day after his arrival only two lesions remained unhealed, the one upon the penis and one upon the forehead. His weight at that time was 128 pounds and he seemed in a fair way to recover. He was then placed upon a solution of iodid of potassium for ten days, in increasing doses, which he did not tolerate very well, and he was again returned to the use of iron and mercury. After

[1] *Centralblatt für Chirurgie*, 1893.

the second inunction he became despondent and hysterical and talked of suicide. An intense soreness, with much swelling manifested itself in the esophagus, and it was with much difficulty that he could swallow at all. On the next day he was given another inunction, which seemingly intensified all of the symptoms to an alarming degree, and at the same time complete anesthesia of both arms and legs from the elbows and knees down occurred. So complete was this anesthesia that he experienced no pain whatever when I ran a large needle not only into but entirely through the gastrocnemius muscle of the left leg. He was then directed to take vapor baths and to drink large quantities of water, and further medication was discontinued. After ten days sensation again was about normal. The succeeding history of the patient is uninteresting, as he recovered under tonic treatment without further difficulty, The point to be brought out here is, that during all this time never for a single moment were there any signs of salivation or of tenderness of the gums. This case is only one of many which I could cite as bearing upon this feature.

The second case presents an entirely different picture; it occurred in the person of a young married woman, twenty-two years of age, the mother of a child four years old. Three months after the birth of this child the patient contracted syphilis from her husband. She had the initial lesion, which was followed by non-suppurating inguinal adinitis, slight eruptions, and sore throat. Her husband permitted her to remain in this condition during nine months without treatment. She was thoroughly wretched, being crippled from the effects of rheumatism, and suffering intensely from sore throat all the time, her weight decreasing from 130 to 94 pounds. Finally, she was placed under treatment at her home in Ohio for a period of about four months, but failing to improve, was sent to the Hot Springs, where she took mercury and the iodids, so she states, during three months, but to no purpose except that her condition became worse. Salivation was invariably produced after a few days' use of mercury, and new ulcerations made their appearance in the mouth and throat. She then fell into the hands of a throat specialist, who employed local treatment and tonics, and with fair results, for about two months later she returned to her old home, but after remaining there two weeks the lesions developed again. She immediately came back to the Hot Springs and resumed treatment with the physician who had treated her before, but the ulcerations increased and finally were followed by a stricture of the esophagus which required dilatation. During this time her physician made a trial of practically all tonics and antisyphilitic remedies, and stated to me that the patient could not tolerate mercury in sufficient quantities to do her any good. She had had her teeth repeatedly attended to by a competent dentist, but the salivation resulting from the exhibtion of mercury was so pronounced that she could neither eat solid food nor could she sleep. She remained in this condition during one year and a half, and then, on April 27, 1897, came under my care.

Her weight at that time was 108 pounds. She did not appear to be anemic, but tired easily upon exertion, had a poor appetite, and was constipated. The heart, lungs, kidneys were normal. The spleen was slightly enlarged. There was one ulcer upon the left tonsil, one upon the tongue, and a third upon the lips, while the mouth and throat were covered with scars. An examination of the blood showed a reduction of hemoglobin to 35 per cent. and a diminution of red blood-corpuscles to less than two-thirds the normal number.

An antiseptic mouth wash was prescribed for frequent use, and the ulcers were touched every second day with a twenty-grain-to-the-ounce nitrate of silver solution. The blood was examined every fifth day. Ten days after the beginning of this treatment another ulcer made its appearance low down in the pharynx, and the others showed no improvement. The amount of hemoglobin had been reduced to 20 per cent., and the woman's strength was so impaired that it was only with difficulty that she could walk. During this time her gums were so sensitive that they bled freely whenever she attempted to eat. She was then given sixteen drops of a preparation of gold and mercury, one hour after each meal, with one tablespoonful of a solution of peptonate of iron and manganese. The latter preparation was discontinued on the second day, as it gave rise to severe headaches, and the mercurial preparation was increased to twenty drops thrice daily, but on the fourth day she again became intensely salivated. I then treated the gums with a 4-per cent. solution of cocain, and with a strong, stiff tooth-brush literally tore them to pieces, afterward allowing the blood to flow freely. The tissues were then treated with an antiseptic solution, followed by alcohol. This treatment was repeated daily, and the mercurial solution, instead of being discontinued, was increased in quantity until she was taking thirty-five drops a day.

On May 12th the hemoglobin registered 25 per cent., the red corpuscles being as before. On May 17th the hemoglobin still registered 25 per cent., but on the 22d it was 30 per cent., on the 27th 35 per cent., on June 1st, 40 per cent., June 6th, 45 per cent., June 11th, 55 per cent., June 21st, 70 per cent., June 26th, 70 per cent., and on July 1st, 80 per cent. At the latter date the number of red blood-corpuscles was normal, the patient's weight had increased to 131 pounds, and she felt better than for several years, in fact, since the beginning of the disease.

These cases are of interest on account of their wide dissimilarity. The first patient took mercury, with excellent results up to a certain time, when poisoning by the drug occurred and very nearly proved fatal. At no time did signs of ptyalism become evident nor did the gums become sensitive. The second patient, on the contrary, became salivated whenever mercury in even small doses was given, yet she was made to take large quantities of the drug with most satisfactory results. There are few patients who will use a brush on tender gums with sufficient force to be of service, and I make it a rule, no matter if the teeth and gums appear to be in perfect condition, that every syphilitic patient must visit a dentist and have the teeth thoroughly overhauled and then, in my

presence, scrub and brush the gums vigorously. I feel assured that with these precautions, and watching carefully the condition of the blood, we have little to fear in giving even very large doses of mercury.

MEDICAL PROGRESS.

Spontaneous Rupture of the Aorta.—AMES AND TOWNSEND report in the *Maryland Med. Jour.*, July 3, 1897, a case of spontaneous rupture of the aorta without aneurism, occurring in a man aged seventy-five, due to a crack in a calcareous plate in the aortic wall not far from the valves. From the meager history of the case obtainable, it appeared that the man died suddenly while at work. Some hundred such cases have at one time and another been reported, and though the subject has little clinical importance, it is interesting to notice the points which a study of these published cases brings out. It is probable that an examination of the many cases of heart failure and sudden death would show that many of them are really cases of ruptured aorta, and that this accident is by no means so rare as has generally been supposed.

Two-thirds or more of all cases occur in men, and almost as large a proportion in the ages between thirty and sixty. Probably in every instance the aorta is diseased. This has been denied by some, but reason and the cases reported both agree in sustaining this theory. Granted a diseased vessel, and most likely a hypertrophied heart as well, it is evident that a strain, such as produced by a fit of anger, or an attack of vomiting, will increase tension beyond the power of the weakened aorta to withstand it. In 60 per cent. of the cases the rupture is near the heart, while in 20 per cent. it is in the curved portion of the vessel. Rupture of the abdominal aorta is most rare. The explanation of these statements was long ago given by Rokitansky and Broca, who insisted that the recoil force of the column of blood in the aorta might be sufficient to tear up the intima, if diseased, and sometimes the media as well, just above the aortic valve segments.

The most constant symptom is pain, severe and tearing in character and located in the chest, though radiating to the neck, shoulders, or abdomen. Of other symptoms, dyspnea, collapse, feeble, irregular pulse, vomiting, giddiness, chilly sensations, cough, drowsiness, and hemoptysis are occasionally noted.

The Etiology and Pathology of Acute Peritonitis.—FLEXNER publishes, in the *Maryland Med. Jour.*, June 25, 1897, an analysis of 101 cases of acute peritonitis, which throws a little additional light on this still too obscure subject. There is a great probability that the capacity of resistance of the normal peritoneum is closely associated with the preservation of the integrity of the normal peritoneal covering. We may disregard for the present, as not yet proven, the idea of a non-infectious or chemical form of peritonitis.

An examination of these 101 cases of acute peritonitis from the autopsy records of Johns Hopkins Hospital, in which bacteriologic examinations were carried out, shows that these cases may be divided in three groups:

1. *Primary or Idiopathic Peritonitis.*—In these the infectious agent did not enter from without as a result of a surgical operation, or from within through the medium of a diseased viscus. There were 12 of these cases, and the predominating pathogenic bacteria were pyogenic strepto- and staphylococci. All but 1 were mono-infectious.

2. *Exogenous Peritonitis.*—These were all cases of post-operative peritonitis, in which the germs did not enter from a diseased viscus but were introduced at the time of operation. There were 33 cases of this class, 25 of which were mono-infectious, and 8 polyinfectious. The predominating organisms here were also the cocci, but bacilli were more common than in class 1.

3. *Endogenous Peritonitis.*—In these cases the infection comes from the intestine. There were 56 in all, 23 being mono-infectious and 33 polyinfectious. The predominating micro-organisms were the bacillus coli communis and the streptococcus pyogenes. The former occurred in 43 of the 56 cases, but it was present alone only 8 times. The latter was present 37 times, but only 7 times alone. There was also a much greater variety of other bacteria present than was the case in the other two classes.

Sarcoma from an Irritated Mole.—GRANT mentions in the *Intercolonial Med. Jour. of Australasia*, May 20, 1897, an instance of sarcoma developing from a mole as a result of thrice-repeated injury. The patient, a healthy man of twenty-seven, had had a black mole on his right arm since birth. At the age of twenty-four it was torn by the horn of a sheep, but healed rapidly. A little later it was again injured, and increased to the size of the finger tip. After a third bruise, received eighteen months after the first injury, it was still larger, and several secondary spots had appeared in the vicinity. All of these growths were excised. There was no local recurrence, but six months later a lump was removed from the right axilla. Within six months from the removal of this nodule the skin of the arms and trunk was studded with melanotic nodules of various sizes and at different depths, and there was only the outlook of a speedy death.

Sterilization of Rubber Catheters.—A simple and practical method of sterilizing soft rubber catheters is given by WOOLF, in the *Centralbl. f. d. krank. Harn. u. Sexuel-organe*, vol. viii, p. 285. After use, the infected catheter is washed with water and put into a 5-per-cent. formalin-glycerin solution. There it remains during one day and is then put into glycerin. These substances are kept either in long test-tubes, or in suitable lengths of inch glass tubing with corked ends, each catheter having its own tube. The transfer from one tube to the other is made without touching the vesical end of the instrument. For use, the catheter is taken out and dipped without washing into a glass containing a 20-per-cent. solution of sugar in glycerin. This lubricates it well. All of these solutions are easy to sterilize by boiling, and the catheters may be boiled in their tubes, with or without a water bath, without injury.

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SATURDAY, AUGUST 21, 1897.

APPARENT DEATH AND PREMATURE BURIAL.

DURING the passed year this subject has been widely discussed on the continent of Europe and in the English press, and has engaged public attention to an unusual degree. This has resulted in the formation of societies whose avowed purpose is the prevention of premature burial. Cases of *live* sepulture are certainly rare in all civilized countries; nevertheless, no experience can be more horrible than that of being buried alive, and the occurrence of a single case in a generation is sufficient to stimulate the most scientific research into preventive methods. Ordinarily, a person is pronounced dead when signs of respiration have disappeared and the heart has ceased to beat. Cases, however, are upon record in which people have gone into a state of trance in which these tests have been set at naught, and the patient has again resumed the active functions of life. Since the state of trance and hypnotism has been more generally recognized by the profession, greater care has been observed in pronouncing upon suspicious cases, and in some countries in Europe the only absolute sign of death which is recognized is advanced or advancing decomposition. To apply this test in all cases, it would be necessary to have skilfully managed waiting mortuaries in which bodies could lie until decomposition begins. Such mortuaries are to be found in certain parts of Austria and Germany, but to be of universal application, they would have to be very numerous, and this would involve greater expense than the necessity of the case seems to justify.

The late Sir Benjamin Richardson, who had made the condition of trance, catalepsy, and other death-counterfeits the study of investigation, formulated the following tests as necessary to unequivocally establish the reality of dissolution: (1) Respiratory failure, including absence of visable movements of the chest, absence of the respiratory murmur, absence of condensation of moisture in the breath. (2) Cardiac failure, including absence of arterial pulsation, of cardiac motion, and of cardiac sounds. (3) Absence of turgescence, or filling of the veins, on making pressure between them and the heart. (4) Reduction of the temperature of the body below the normal standard (98° F., in the axilla). (5) *Rigor mortis* and muscular collapse. (6) Coagulation of the blood. (7) Putrefactive decomposition. (8) Absence of red color in semitransparent parts under the influence of powerful rays of light. (9) Absence of muscular contraction under the stimulus of galvanism, of heat, and of puncture. (10) Absence of the red blush of the skin after subcutaneous injection of ammonia (Montiverdi's test). (11) Absence of the signs of rust or oxidation of a bright steel blade, after plunging it deeply into the tissues (the needle test of Cloquet and Laborde).

In a book written on the subject of premature burial, a review of which appears in *La Médecine Moderne*, February 24, 1897, the author, Icard, maintains that the only certain proof of death is the *absolute* cessation of circulation. He emphasizes absolute because the pulsations of the heart may be imperceptible although the circulation still continues. Icard believes that he has discovered in *absorption* an infallible method of determining whether or not circulation has ceased. If any substance be injected into a corpse it will remain at the point of injection. If circulation is present, no matter how feeble, a portion of the injected substance will be carried away, and its presence may be demonstrated in other portions of the body; if this takes place the individ-

ual is not yet dead, no matter what other signs of death may exist. The substance used for this purpose should be soluble in water, non-toxic, easily recognizable in minute quantities, and one which is not present in any portion of the human body either normally or accidentally. There are many substances which fulfill these requirements, such as the ferrocyanids of sodium and potassium, some of the iodids, etc., but the best of all is fluorescein. Dissolved in an alkali, this substance produces a beautiful fluorescent green, while its power of coloring is so strong that a sixth of a grain will distinctly color 100 gallons of water. By experiments upon dogs, cats, rabbits, and guinea-pigs, Icard found that 10 grains of fluorescein are more than sufficient to produce in an adult a characteristic reaction. In order, therefore, to determine the death of a person, 2 drams of the following solution are injected hypodermically:

℞	Fluorescein	ʒ ij
	Sodæ carbonat. . . .	ʒ ij
	Aquæ distil., q.s. ad. . .	℥ ij.

If circulation is present, there will become evident an emerald-green color of the cornea of the eye, of the skin, and of the urine. The coloration of the blood itself is determined by passing underneath the skin one or two cotton threads in order to soak up blood and serum. These are then placed in a test-tube and two teaspoonfuls of water are added, and the mixture is boiled to destroy the red coloring matter of the blood. If there is any fluorescein present, its green color will become apparent.

ECHOES AND NEWS.

A Horse with False Teeth.—A valuable horse belonging to a Louisville, Ky., man enjoys the distinction of being the only horse wearing false teeth.

Michigan Peppermint.—It is said that more than one-half of the peppermint, spearmint, tansy, and wormwood consumed in the entire world is raised and distilled in Michigan.

Chlorate of Potash as a Poison.—Another death from an overdose of chlorate of potash is reported from Vienna. The present case is that of a woman who took 25 grams of the drug.

Quarantine in New York.—The first quarantine in the harbor of New York was established in 1737, and was due to reports that smallpox and spotted fever were raging in South Carolina.

Diphtheria from Chewing Gum.—A family of children at Westchester, Pa., was infected with diphtheria by chewing gum which had been chewed by a child while suffering from the first symptoms of the disease.

Women Medical Students.—The College of Physicians and Surgeons of Chicago, Ill., will henceforth admit women students, by order of the trustees of the University of Illinois, of which it was recently made a department.

Where Life Is Long.—It is said that in Norway the average length of life is greater than in any other country on the globe. This is supposed to be due to the fact that the temperature is cool and uniform throughout the entire year.

Death of Dr. A. F. E. Krog.—Dr. Albert F. E. Krog was found dead in his office at 233 East Fourteenth street, New York, on the 10th inst. He had been an invalid for some time and was quite feeble. Death was due to heart disease.

Memorial to John and William Hunter.—At a public meeting recently held in Glasgow it was proposed to collect a fund for a memorial to John and William Hunter, the great physiologists. The subscription list was headed by a gift of $4250.

A Special Hospital for Patients Suffering from Tinea.—The Lailler Hospital and School, for children suffering from tinea, has just been opened in Paris. It affords accommodation for 300 patients, and its maintenance will cost $40,000 annually.

Facts about Bananas.—The *Medical Times* says that bananas should never be eaten raw, for they are full of germs, besides being indigestible. Three bananas, weighing one pound, when baked equal in nourishment twenty-six pounds of bread.

Death's Big Harvest.—Bombay officials are greatly alarmed over the death-rate of the past week. Of the 1071 deaths 220 were due to cholera and 18 to plague. The total death-rate is equal to 65.61 per thousand, or double the normal rate.

Death of Dr. Arthur S. Kennedy.—Dr. Arthur S. Kennedy of Auburn, N. Y., recently lost his life as a result of the accidental discharge of his gun while hunting. Dr. Kennedy was fifty-five years of age and had retired from active practice some time ago.

Memorial to Greig Smith.—The colleagues of Greig Smith have decided to make an appeal for subscriptions to provide a bust or medallion, to be placed in the Bristol Museum or in the operating-theater of the Bristol Royal Infirmary, to perpetuate his memory.

Inflated the Baby.—A little boy of Beaver Falls, Pa., placed the tube of a bicycle pump in a baby's mouth and began pumping in air. The child's stomach swelled like a balloon, and in a few minutes she became unconscious. The mother arrived in time to save the child's life.

A Gold Medal for Professor Behring.—A gold medal and a purse of 1000 marks have been presented by the University of Würzburg to Professor Behring for his discovery of the diphtheria antitoxin, which is considered the most important discovery made during the past three years.

Typhoid among the Striking Miners.—The news comes from Pittsburg that typhoid fever in a mild form is raging in the vicinity of Camp Determination at Turtle Creek. Sixty cases, with five deaths, have occurred so far. Bad water and a lack of sewerage are the cause of the epidemic.

Poorhouse Scandal.—Charges of ill-treatment and neglect have been made against the keeper of the poorhouse at Passaic, N. J. Upon investigation the place was found to be in a filthy condition, alive with vermin, and the inmates ill-fed and neglected. The keeper will probably be discharged.

Needle in a Baby's Back.—A Morristown, N. J., baby was being undressed recently, when the nurse scratched her hand on a sharp point protruding from the child's back. Upon investigation this was discovered to be the point of a needle, which, upon being withdrawn, was found to be unbroken.

Skulls in the Street.—A heavy rain storm swept away part of the embankment of an old cemetery at Paterson, N. J., last week, and, as a result, several skulls and other human bones were washed out of graves and swept into the street. They were turned over to the coroner, who had them reburied.

Black Clothing Unhealthy.—A physician in Philadelphia recently told a woman who consulted him that he would not prescribe for her if she persisted in wearing black or somber clothing, as he considered her "peculiarly nervous and neurotic condition" partially due to the depressing effect of her garments.

A Prize for the Discovery of the Bacillus of Yellow Fever.—One-half of the prize of $220,000 which the government of Brazil is to present to the author of a work demonstrating the existence of the bacillus of yellow fever and to the discoverer of an effective treatment of the disease, will probably be awarded to Sanarelli.

Bogus University Degrees.—It seems that the National University of Chicago is pursuing its nefarious business across the water. The British Government is considering the advisability of prosecuting, on the charge of obtaining money by false pretenses, the agents of this institution for offering to confer degrees for $5 each.

To Rid Cattle of Texas Ticks.—In order to rid them of ticks, and in this way destroy the germs of Texas fever, 200 cattle were dipped recently in chloronaphtholeum at Fort Worth, Tex., under the direction of Dr. Nergeard, of the Department of Animal Industry. A quarantine against infected cattle has been declared in St. Louis.

Fourth Congress for the Study of Tuberculosis.—The fourth congress for the study of tuberculosis will be held in Paris during the last week of July, 1898. The following questions will be discussed: "Sanitaria for Consumptives;" "Serums and Toxins;" "The X-ray in Diagnosis and Treatment," and "Tuberculosis in the Lower Animals."

No More Smallpox.—Dr. Benedict, of the Bureau of Contagious Diseases, reports that there have been no cases of smallpox reported in the city of New York since July 14th, and that the small epidemic of the disease which caused a little uneasiness has been entirely crushed out. In all, seventy-two cases were reported between March 14th and July 14th.

Vaccine for Drunkenness.—The news comes from San Francisco that Dr. F. W. D. Evelyn of St. Luke's Hospital of that city has made public the results of fifteen-years' experiments by which he claims to have found a certain cure for drunkenness. The remedy consists of the inoculation of a substance obtained from the blood of a horse into which alcohol has been injected.

Science and Ice Cream.—The British Institute has been investigating ice cream and has discovered that the kind which is sold on the street, popularly known as "hokey-pokey," contains various insects, legs, wings, straw, hair, coal-dust, woolen and linen fiber, tobacco, muscular tissue, and 7,000,000 microbes per cubic centimeter. The better grades of ice cream were found to contain numerous micro-organisms and ptomains.

For People Buried Alive.—An apparatus has been constructed by a Russian inventor by which anybody who is unfortunate enough to be buried alive can give warning of the fact. The device consists of a button situated on the inside of the coffin immediately over the breast of the individual placed in it. If he should come to life and begin to breathe, the expansion of the chest will press the button and set going an alarm bell in the office of the superintendent of the cemetery.

Mosquitoes as Carriers of Infection.—The remarkable number of serious cases of poisoning from mosquito-bites which have been reported during the present summer, adds additional confirmation to the theory that mosquitoes may act as carriers of infection. The unusual humidity of the atmosphere, due to the continuous rains combined with the high temperature, have favored the development of mosquitoes and they have been unusually abundant and vicious in every part of the country.

Queens County Almshouse Scandal.—Official investigation of the management of the Queens County almshouses has brought to light a shocking state of affairs at the Barnum's Island almshouse. One of the women inmates has given birth to four children during her stay there, and another woman was found who had recently given birth to one. Utter disregard of even ordinary methods of disassociating the sexes is shown in all the institutions, and at Barnum's Island the male and female wards are not even separated by adequate partitions.

The Rocky Mountain Interstate Medical Association.—The organization of this new Association, composed of mem-

bers of the regular profession residing in Colorado, Utah, Montana, Idaho, Wyoming, New Mexico, and Arizona, was perfected at Salt Lake City, Utah, on July 24th, by representatives from four of the States named. Dr. C. P. Hough of Salt Lake City, was elected president; Dr. C. K. Cole of Helena, Mont., first vice-president; Dr. Clayton Parkhill of Denver, Col., second vice-president, and Dr. E. Stemer of Rawlins, Wyo., secretary and treasurer. The first meeting will be held at Denver in June, 1898, during the meeting of the American Medical Association.

Experiments with a Human Body.—In order to ascertain whether it is possible for a human body to be completely dissolved by submerging it in a solution of crude potash, the experiment was tried recently at the Rush Medical College, Chicago, and the results may enable the State of Illinois to convict one Leutgert, a sausage manufacturer, who is accused of killing his wife and making away with the body by subjecting it to the action of potash. The experiment showed that after a cadaver had remained in the bath for a specified length of time, nothing remained of it but a few bits of bone, which, presumably, also would have become dissolved if allowed to lie longer in the solution.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

RESULTS OF THE STATE BOARD EXAMINATIONS—THE AMERICAN PUBLIC HEALTH ASSOCIATION'S MEETING—A LOW DEATH-RATE FOR PHILADELPHIA FOR THE FIRST SIX MONTHS OF 1897—A NEW GROUP OF BUILDINGS FOR THE PENNSYLVANIA INSTITUTION FOR THE BLIND—VITAL STATISTICS FOR THE WEEK ENDING AUGUST 14TH.

PHILADELPHIA, August 14, 1897.

OF the 445 candidates for licenses to practise medicine in Pennsylvania, who were examined by the State Board of Medical Examiners in June, 1897, eighty-three failed to pass successfully. Of the total number of candidates twenty were women, of whom seven failed.

This high percentage of failures, which is over five per cent. in excess of that met with in previous examinations, cannot be explained by the plea of the severity of the examination, for it is generally understood that the questions asked of this year's candidates were eminently fair and practical. The results, therefore, must be taken to demonstrate that there is a need for a more thorough preliminary training for students of medicine, and this is a need which medical colleges who care anything for the reputation of their graduates before the public cannot afford to disregard. It is gratifying to remember, however, that such steps have been, or are being, taken by the medical schools of this State generally, although these measures, if we gauge their efficiency by the reports of the State Board Examiners, have apparently been too recently carried out to visibly affect the showing of their graduates. Another year, or another two years, at the most should remedy this very apparent flaw in the requirements for the doctorate in medicine.

The local committee of the American Public Health Association, which is to hold its twenty-fifth annual meeting in this city next October, has completed the arrangements for the forthcoming meeting by announcing the various committees on arrangements, finance, exhibits, and other departments, and by mapping out the work of the Association as far as it is possible for a local committee to do. The secretary, Dr. Benjamin Lee, gives prominence to the fact that the local and State membership of the Association is not at all what it should be, and he is making determined efforts to secure the accession of a large number of new members from Pennsylvania and neighboring States before the time set for the Association's coming meeting. From present indications, the scientific work of the meeting promises to uphold the high standard of excellence which has attended the transactions of this body during the twenty-five years of its existence, and it is proposed to give no small thought to the social aspect of the convention—a matter in which Philadelphia takes a certain amount of pardonable pride.

With a population of 1,215,000, the death-rate in Philadelphia for the first six months of 1897 has been only 18.14 per 1000 of population, while for the past ten years the average mortality has ranged from 20.64 to as high as 22.86 per 1000. The decrease has, however, been almost entirely confined to adults, for while a comparatively cool summer caused a decided falling off in the usual number of deaths from cholera infantum and other diseases which usually cause such a high death-rate in infants, there has been a notable increase in deaths from diphtheria and scarlet fever, with the result that the mortality in children has not been lowered.

It is a notable fact that among adults, for the first time in the history of the city, pneumonia has taken first place as a cause of death, supplanting pulmonary tuberculosis, which has heretofore ranked far ahead of other diseases in the number of its victims. This is held to be due, at least partly, to the stringent measures against tuberculosis which have been taken for some months past by the Board of Health, both in the general distribution of printed matter on the subject, and in the rigid inspection of food articles exposed to the influences of this disease.

Plans have been completed for the new buildings of the Pennsylvania Institution for the Blind, which are to cost in the neighborhood of $300,000. The main building is to be built on the old Spanish monastery plan, surrounding two handsome cloisters; it will measure 361 x 222 feet, and will contain the class-rooms, and pupils' dormitories, together with a large auditorium and gymnasium. The construction of several detached buildings is also contemplated, to be used for various purposes. The main building will be modeled on historic lines, with broad stone corridors, and will contain the latest facilities for the instruction of the blind, many of which originated in this well-known institution.

The number of deaths occurring in Philadelphia for the week ending August 14th, was 406, a decrease of 6 from the preceding week. Of the total deaths, 173 occurred

in children under five years of age. There were 21 deaths from diphtheria, 4 from scarlet fever, and 9 from typhoid fever. The total number of new cases of contagious diseases for the week was 202.

LETTER FROM ATHENS.

[Special Correspondence of THE MEDICAL NEWS.]

THE MEDICAL DEPARTMENT OF THE GREEK ARMY—ABSENCE OF ORGANIZATION OF FIRST AID TO THE INJURED—THE WORK OF THE RED CROSS SOCIETIES—ABUSE OF THE GENEVA INSIGNIA—RATIONS AND CAMP SANITATION—DIFFICULTIES IN THE WAY OF OBTAINING TRUSTWORTHY INFORMATION AS TO MORTALITY FOLLOWING INJURY AND OPERATIONS.

ATHENS, GREECE, July 28, 1897.

ARMED with a card of introduction from the American minister, and accompanied by Dr. Achilles Rose of New York, who is spending the summer in Athens, and who acted as interpreter, a visit was made to the War Office, where we were most courteously received. Upon making known our desire to learn something of the organization and work of the Medical Department of the Greek army during the late war, we were referred to the surgeon-general's office. We found that functionary installed in a 12 x 14 apartment, and, from the absence of evidences of system, we were in a measure prepared for what followed our inquiries. A most courteous and obliging young medical officer was assigned to our service, and our investigations commenced at once.

Very little information as to the organization of the Medical Corps or the methods of relief to the injured upon the field could be obtained. It was very evident that the outbreak of hostilities found the Medical Department of the Greek army as little prepared for the work at hand as the other departments. We had previously learned from some Red Cross nurses sent out from England, and who had just returned from the scenes of the recent conflicts in Thessaly, that there was practically no first aid near the actively engaged lines. As a result of this, many died from hemorrhage who, without doubt, could have been saved by simple provisional methods. The presence of the first aid organizations was practically forbidden. This was not denied at the surgeon-general's office, and was confirmed by statements obtained from patients in the hospitals whom we afterward saw. According to the latter, five days elapsed, in some instances, between the reception of the injury and the first dressing.

It is probably true that the medical department was not only greatly hampered by absence of efficient organization, but by lack of proper facilities for carrying on the work as well. We were not able to obtain an inspection of a field outfit of instruments, and the failure of our efforts in this direction aroused the suspicion that there was very little in this line to show us. At one of the hospitals we were shown what would have been a fair outfit for a small civil hospital, with the statement that it had been the gift of a wealthy foreign lady who sympathized with the Greeks in their struggles against the Turks.

The English Red Cross Society furnished six surgeons. In addition to this a corps of trained nurses was sent out by the London *Daily Chronicle*. These did most efficient work. Besides this the German and French organizations furnished each a complete hospital outfit of 120 beds, with surgeons, assistants, and nurses.

The charge has been made that the Turks refused to respect the Geneva Cross. I am informed that this arose from the fact that the Greek irregulars employed the insignia to cover an attack upon the Turkish troops, and that, naturally enough, the latter were thereafter suspicious of the display of this emblem.

The rations of the Greek soldiers consisted mainly of bread and cheese. Camp sanitation is said to be almost unknown. Laxity in respect to the latter is not to be wondered at when it is considered that even the ordinary discipline of camp life is disregarded. Roll-call is more honored in the breach than in the observance, and drills, inspection, and review are almost unknown.

It is impossible to ascertain the mortality among those injured in battle. This arises partly from the absence of records available for the purposes of study, and partly from a disinclination on the part of the combatants to acknowledge serious losses. Judging from the impressions received, the opportunities for studying results of gunshot wounds and their treatment afforded by this conflict will be comparatively slight. As far as the available sources of information could furnish knowledge upon the subject, it was ascertained that 3000 wounded were cared for in Athens. These were transported to the city from the districts where the fighting took place, partly by boat and partly by wheeled ambulances. No railroads were available for the purpose. Of these, about one-half were cared for in the Ecolé Hypaxiomaticon and the Ecolé Evelpidon, two government military schools of Athens which were converted into temporary hospitals for the purpose. The remainder were cared for in the Military Hospital and the Evangelical Hospital under Professor Galvani.

Nearly all operations were performed before the patients were brought to Athens, and, therefore, it is impossible to ascertain anything concerning the immediate mortality following these, or that occurring among those not operated upon. Those who survived the shock and hemorrhage, in both instances, as well as the transportation over mountain roads, were naturally the most vigorous subjects, and the most likely to recover.

A round of the hospitals occupied portions of two days: Most of the injured were suffering from gunshot wounds, and these from wounds inflicted by the comparatively heavy Peabody-Martini rifle ball. This arm seems to have been generally used by the Turkish troops. Here and there a smaller wound of entrance suggested a Mauser bullet, but these were few and not easy of identification. The Greek surgeons spoke with pride of two cases of gunshot wounds of the abdomen, one of which involved the liver, and which recovered without laparotomy. A shrug of the shoulders and a roll of the eyes were the only answers to the query as to how many had died following such injuries.

From the stories current of the fierceness of the Turkish cavalry charges it was expected that wounds from cut-

las strokes and saber thrusts would be presented. But one such was shown us. A Greek officer informed us that in no instance did a hand-to-hand conflict take place; hence the absence of this class of injuries. Only two cases of shell and shrapnel injuries were found.

Most of those shown were well on the road to recovery. In most instances there were evidences present of suppurative action, although some surprisingly good results following penetrating wounds of joints were exhibited. The first dressing consisted of iodoform gauze, cotton, and gauze bandages wrung out in sublimate solution. Whenever the emergency would permit the surrounding parts were cleansed and shaved as a part of the treatment. In cases complicated by fracture the parts were supported by means of ready-made splints of French manufacture.

Most of the Greek military surgeons have received their education in part in Germany. The shortcomings of the medical department are due, not so much to lack of intelligence as to absence of system and organization, without which, in the face of the dire emergencies of war, the efforts of the highest order of talent or the brighest flashes of genius are doomed to disappointment and defeat.

GEORGE RYERSON FOWLER, M.D.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE NERVOUS LESIONS OF INFANTILE CONVULSIONS—PROFESSOR PALTAUF'S DEMONSTRATION THAT ONLY A SPECIFIC STREPTOCOCCIC SERUM IS OF THERAPEUTIC VALUE—THE DREAD OF LEPROSY CONTAGION.

VIENNA, August 1, 1897.

A RECENT report from Professor Obersteiner's Laboratory of Nervous Pathology here in Vienna seems to show that there are certain definite nervous changes concerned in the immediate etiology of infantile convulsions. The specimens examined came from two nurslings who had had characteristic convulsions. The examination of the spinal cords, after staining by Marchi's method, clearly showed degenerative processes in the anterior nerve-roots, the degeneration reaching to the anterior horns, and being especially noticeable in the cervical and lumbar enlargements. The upper cervical roots were but very slightly affected, and those of the dorsal region not at all. While the hardening in Müller's fluid, necessary for the carrying out of Marchi's method of examination, made it impossible to apply that of Nissl, the most reliable test for the presence of cellular degeneration, according to the older rules of staining, there seemed to be degenerative processes at work in the anterior horn cells as well, though in the initiative stage. Dr. Zappert, who reports the findings, has examined the cords of more than one-hundred infants, and considers that the presence of such changes is very frequent. The motor-nerve apparatus in a rapidly growing child seems to be intensely sensitive to toxic influences. Seemingly slight infections produce sufficient toxins to affect tissues which react so easily.

Here, as in other departments of medicine, the *rôle* of idiopathic disease is decreasing in importance, that of infection taking its place. In almost the same way, also, reflex troubles supposed to be due to intense irritation of sensitive nerve endings, reacting on corresponding or sometimes even distant motor nerves, are being brought more and more under the head of infectious processes. Teething and summer diarrhea are the mediate and not the immediate causes of convulsions, the weakened state of the system, with consequent infection and absorption of toxins, instead of the intense irritation of peripheral nerves being the cause of the nervous explosion along motor-nerve tracts.

It is thought that like changes in spinal nerve cells and roots will be found as the explanation of such affections as diphtheritic paralysis and pseudoparalysis syphilitica, the general process in these conditions being a similar, though much more intense one than that observed in the production of ordinary infantile convulsions. That anterior poliomyelitis is a consequence of infection from intestinal toxins, our American statistics, showing its increased frequency during the summer months, have long since made clear. This demonstration that probably every case of infantile convulsions is associated with more or less pathologic change in the anterior horns and roots, is extremely interesting, and may help to explain the occurrence of central nerve degenerations and muscular atrophies in later life quite as well as scarlet fever explains the occurrence of Bright's disease, or rheumatism that of valvular lesions of the heart.

Professor Paltauf, whose thoroughly conservative though eminently scientific appreciation of advances in bacteriology and serotherapy is well known, has been giving some very interesting demonstrations of the specific therapeutic properties of various streptococcic serums. Animals have been inoculated in each ear with definite amounts of cultures of different forms of streptococci, and have then been injected with a streptococcic serum prepared by the gradual immunization of animals with ascending doses of one of the varieties of streptococcus. This never fails to put an end to the pathologic process produced by the affiliated streptococci, but has very little or no effect on the local inflammatory and general constitutional symptoms caused by the other form. To have any effect on the latter, the serum must be used in very large doses, and even then its action is not sure and radically curative.

Meantime, however, there are any number of reports of the success or failure of streptococcic serum, especially in puerperal cases. Often enough cases of puerperal sepsis are due to the presence of other bacteria than streptococci, but even when the latter are demonstrable it would seem to be all important to determine the specific variety which is at work. As was the case with diphtheria serum when injected for what was really a streptococcic infection in certain cases, the reputation of Marmorek's serum is liable to suffer when employed promiscuously, and for cases with which it has not the slightest biologic connection. Unfortunately, the varieties of streptococci are not so well differentiated by bacteriologists themselves as to make the use of a specific streptococcic serum easy for the practitioner. Meantime it will be employed in many cases, but always with other avail-

able therapeutic measures, and discouraging reports must not be given too much weight, as the solid foundation of its antitoxic specificity has been too clearly demonstrated experimentally for it not to prove ultimately of value.

The leprosy scare, which occurs periodically in different parts of the world, took place in the Dalmatian province of the Austrian Empire not long ago. A series of cases of a severe chronic skin disease occurred in a certain family, and finally the neighbors began to shun its members. Then it was noised about that they were lepers. The rumor came to the ears of the Austrian officials that leprosy was endemic in the province, and a medical man was sent to investigate. He reported that the rumor was utterly unfounded, but public opinion was not satisfied until Professor Neumann, who has devoted a good deal of study to leprosy in Norway, Sweden, and Iceland, went down to Dalmatia, brought one of the patients back with him, and demonstrated the case as one which Duhring, Thost and Unna have described as ichthyosis palmaris et plantaris cornea, or keratoma palmare et plantare hereditarium, an extremely chronic affection often producing very unsightly deformities of the hands and feet, the heredity of which may be traced through three or four generations. For it, Professor Neumann suggests the name "keratosis hereditaria."

I notice by the American medical journals and by the daily papers that a leprosy case has disturbed the sisterly relations of two of our important cities. This seems amusing here where the general teaching is that leprosy is almost absolutely, if not quite, non-contagious. Patients affected with it are treated in the ordinary wards for skin diseases, and pass around for general examinations during clinics. It is to be hoped that the publicity given to the present medical teaching on the subject as the result of the Leprosy Congress in Berlin in the fall will do something toward modifying the tendency of public opinion to make life more unbearable than it is for such unfortunate patients.

TRANSACTIONS OF FOREIGN SOCIETIES.

THE CONGRESS FOR INTERNAL MEDICINE, BERLIN.

THE Fifteenth Annual Congress of Internal Medicine was held at Berlin, June 9 to 12, 1897. This association, which has a membership of about 350, has upon its roll the names of the most celebrated physicians of Germany and Austria. It was at the first congress, held during April, 1882, that Koch announced his discovery of the bacillus of tuberculosis. Since that time many other important papers have been read at its sessions. The report of this year's proceedings which is given in these columns will be found to contain in a condensed form the most valuable of the communications presented.

BAUMLER, who read a paper on *chronic rheumatic arthritis*, spoke of the misuse of the term *rheumatism*, which is made to include cases of neuritis, tabes, periostitis, and gonorrheal arthritis. Properly speaking, "chronic rheumatism" is a chronic form of the acute. These are the cases in which repeated attacks of the acute affection which have not been treated for sufficient time, or not with sufficient care, develop into a chronic form of the acute disease. Since the introduction of the salicylic treatment of acute rheumatism, these cases of chronic rheumatism have become much more rare. Excluding these from consideration, as well as the cases in which the joint affections are tuberculous, gonorrheal, or syphilitic, or due to some infectious disease, there remain the cases of polyarticular inflammation, with destruction of the joint surfaces, deposit of lime salts producing deformity, and often partial or complete disability. Hence the name "arthritis deformans."

The distressing course of this disease when untreated, leaving the patient at last bedridden, is familiar enough to every physician. Whether it is curable in its early stages is still a matter of dispute. Certainly no effort should be spared to accomplish this result if possible.

Trauma, in the widest significance of that term, is an important etiologic factor, as are dampness and cold in sleeping apartments, or in workrooms, though this has been denied by some authors. At any rate, the term "poor-man's gout" is inaccurate, as the disease is as common among the rich as the poor. Women are much oftener affected than men. This has been explained by attributing to the disease a reflex origin, the source of irritation being in the genitals. According to others the cause is an infectious agent, and the outbreak of the trouble in several joints lends credence to this view. Several investigators have announced the discovery of a specific bacillus, but thus far no one has succeeded in producing the disease by inoculation.

OTT said that the object of treatment is to get the patient as quickly as possible over each acute attack. As long as fever continues, absolute rest is to be observed and hot wet compresses applied to the affected joints. If the pain is very great, chloroform liniment or salves containing opium, or morphin injections, are to be employed. The benefit which formerly was sought by the use of the actual cautery may be more simply obtained by repeated applications of tincture of iodin. As internal remedies, aconite, colchicum, and guaiacol formerly were thought much of, and after them, salicylic acid; but valuable as this remedy is in the acute affection, its power is limited in the chronic, and antipyrin, acetanilid, phenacetin, phenocoll, and malakin are far better. If the swelling of a joint with serum is very great, puncture of the joint capsule, and escape of the serous fluid, will give relief.

When the acute symptoms have subsided, circulation around the joint should be stimulated, in order to further absorption of the exudate. Iodin and ichthyol are serviceable at this stage, and baths of the greatest variety, of water, fresh and salt, air, mud, sand, steam, etc., have all been praised, and justly. The essential principle in all of them is the heat. A valuable application of this is seen in the introduction of the affected joint into a chamber where the air is heated to 104° to 119° C. (220° to 246° F.). The limb sweats profusely, and the joint even after one treatment is much softer and more movable. Douches of hot water, or alternate hot and cold streams, massage, and passive and active motions, and electricity,

all are of use while acute symptoms are absent, and all must be suspended if acute symptoms return.

CHVOSTEK has found the blood and extravasations of rheumatic joints almost always sterile; and the idea of a specific micro-organism producing acute rheumatism must be given up. The characteristics of the disease are not sufficiently fixed; they are simply a swelling of the joints, and a short duration, and both symptoms are better explained by the action of toxins than by that of living bacteria.

A paper on *epilepsy* by UNVERRICHT was largely devoted to the nature of the disease. The reader inclined to the cortical, as opposed to the medullary theory. Epilepsy is only a name for a set of symptoms which will lose the significance of a genuine disease as soon as the true causes of the seizures, in different cases, are better understood. In alcoholic, lead, syphilitic, and uremic convulsions the epilepsy is recognized to be only a symptom; and as our knowledge extends, the applicability of the term "true epilepsy" will become less and less.

VIERORDT spoke of the use of iodin in diseases of the vessels, and especially in angina pectoris. During five years he has employed this drug in all cases of arteriosclerosis, with the exception of patients with bad heart lesions or marked albuminuria, with satisfactory results. From 15 to 45 grains of iodid of soda are given daily in divided doses in vichy or milk, for several months, or, with intervals of rest, for a much longer time. If necessary, digitalis or nitroglycerin may be given at the same time. The good results have been beyond question. Many of the patients had already obtained all the benefit possible from a careful dietetic and constitutional treatment before being placed in his care; but by a long-continued course of the iodids, they were relieved of severe angina, were able once more to go about, something which had for a long time been impossible without great pain, and in short were again able to resume their customary occupations.

The action of the iodid is not clearly understood. It probably brings to a standstill the sclerotic process in the vessels, which otherwise would be continually progressing. As a result of this, the increased blood pressure gradually sinks, and when this is accomplished, it suffices for the restoration of function for a long time. There is no proof that the iodid has any action tending to restore the vessels already affected.

EULENBURG discussed the *Three Theories of Exophthalmic Goiter*—hematogenous, neurogenous, and thyrogenous. The hematogenous theory, which was advanced by Basedow, rests on the fact that the disease is so much more frequent in women than men, and is so closely associated with disturbances of menstruation, beginning pregnancy, etc.

Advocates of the neurogenous theory sometimes looks for the cause of the disease in the sympathetic nerves, sometimes in the vagus, and sometimes in the central nervous system. This theory finds support in the hereditary tendency of goiter, in its occurrence after traumatism, shock, etc., and in its association with epilepsy, hemicrania, and chorea, as well as with paralyses, astasia, abasia, diabetes and many other diseases.

The thyrogenous theory presupposes not merely an increased amount of secretion by the thyroid gland, but an altered secretion as well; and that the changed products of the gland circulating in the blood exert a toxic influence upon certain of the tissues, presumably those of the nervous system. In accordance with this theory, surgical treatment of exophthalmic goiter has come into being, and strumectomy, with possibly an after treatment with thyroid extract, is a well-recognized procedure. Truly, in most cases it is a method of treatment which can well be spared, as, unless there are marked local symptoms, treatment by medicine gives equally satisfactory or even better results.

BENEDIKT summed up the *Applicability of the Röntgen Rays to Internal Medicine.* By their use we have first learned the exact range of the heart's activity—something which has been greatly overestimated—its comparative freedom from the diaphragm and its suspension from the great vessels. Moreover, the size of the heart and the exact location of its apex can now definitely be determined, even though covered by the lung, and in case of hypertrophy the exact part involved can be plainly seen. We may see the organ take the form of sucking, and can watch its rotation; if there is dilatation it may be followed from day to day, in order to observe the effect upon it of the remedies employed.

The action of the respiratory muscles, in health and in abnormal conditions, and the presence in the lungs or pleuræ of consolidations are revealed by the variations in the translucence of the chest, by alterations in the position and action of the heart, etc. The diagnosis of new growths is made easier and more certain. The rays are a help in the early diagnosis of tuberculosis of the vertebræ. In abdominal troubles they have not proved so serviceable; though certain stones, notably phosphates and oxalates, have been located by their use. For the exact localization of foreign bodies, in the esophagus and elsewhere, the rays are naturally of great assistance.

LEVY-DORN called attention to the fact that by the help of the rays the diagnosis of aneurism of the aorta can be made at a time when no other method of diagnosis will reveal its presence. The chance that treatment will result in a cure, is therefore increased.

BEECHER has found that the bones in an extremity show with much greater clearness, if the limb first be rendered bloodless with an Esmarch bandage before exposure to the rays.

In a paper, entitled the *Limits of Modern Drugs*, LIEBRICH made an attack upon the advocates of serum treatment. The bacteria, he said, are often not the real cause of disease, but they direct themselves against the body, the power of resistance of which is already lowered. How often one sees tuberculosis of a single organ, without resulting phthisis, just as tubercle bacilli exist in the bronchi of healthy men, and do not cause the disease. Before the bacillus can enter the lung, this must first be diseased; and therefore it is hopeless to try to heal phthisis by destroying the baccili. If this were done, the disease would

remain and the lung would simply become the harbor for other parasites. We must look to "cellular excitants" for a real cure, and these exist, not merely in fresh air and diet, but also in the pharmacopœia. A most valuable remedy of this class is cantharidin.

The discussion of this paper led to a presentation of the already familiar arguments for and against the use of antitoxin in diphtheria. Speakers on each side admitted that the decision of this much-disputed point must finally rest with practising physicians, and not with scientific experimenters.

RUMPF has investigated the *Disposition of the Lime Salts in Heart Disease*, and finds, (1) that if lime salts are given freely, a considerable portion remains in the body; (2) that in patients with calcification of the vessels, there also may be a diminution of the excretion of lime salts as compared with their introduction; (3) that the amount of lime in the blood varies both in health and disease. The writer, therefore, concludes that in certain diseases it may be advantageous to reduce the ingestion of lime salts. From further experiments with different kinds of food, he has been led to believe that a mixed diet is better for cardiac cases than a diet limited to flesh and fat.

On the Significance of Stimulation for Pathology and Therapy in the Light of the Theory of the Neuron, was the title of a paper by GOLDSCHNEIDER. The theory of the neuron rests upon the supposition that the nervous system is not a continuous path for transmitted influences, like a system of telegraph wires, but that every cell with its axis cylinder and its dendritic processes is an independent entity of a functional and nutritive nature. The neurons are not united—they only touch mechanically. If excitement rises high enough in one neuron, it is communicated to the next. Every neuron has its particular swell of excitability, that is, a certain pitch of excitement which it must reach in order to become active. This property of a neuron is for it an inherited and lasting one. All the neurons of the central nervous system are in touch; therefore, a sufficiently powerful irritation may spread over the whole tract. The stimulus travels along the line of least resistance, wherever the excitability has the swell of lowest value.

The excitability of the neurons can be so changed by irritation that the slightest stimulus will increase it, while strong ones will reduce it. This theory clears up many riddles in nervous diseases. It brings us also to new therapeutic resources. Thus, we may reduce an overexcitability of one part of the nervous system by rendering more sensitive another portion. In unilateral loss of sensibility it is evident that electricity to the unaffected side may restore the balance between the two sides, and this is borne out by the results of treatment. Hydrotherapy and massage produce good by calming the too excited neurons. Suggestion must be looked upon as a change in the degree of excitability of the neurons, either an increase or a decrease according to circumstances.

BEIN has been unable to produce *mumps* from cultures of a streptococcus found in that disease, in the duct of Steno, in parotid abscesses, and occasionally in the blood. This streptococcus in appearance resembles the gonococcus and meningococcus, and is considered by Michaelis and others to be the specific germ of mumps.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Tenth Annual Meeting, Held at Niagara Falls, N. Y., August 17, 18, 19 and 20, 1897.

FIRST DAY—AUGUST 17TH.

THE meeting was called to order at 9.30 A. M. by the President, DR. JAMES F. W. ROSS of Toronto. After certain preliminary business had been despatched and new members elected to membership, Dr. W. R. Campbell of Niagara Falls was introduced. He extended a welcome on the part of the Niagara Falls Academy of Medicine to the visitors. A cordial invitation was given to all to join in the entertainments which had been organized by that body during the session of the Association.

The first paper presented was by DR. WILLIAM WARREN POTTER of Buffalo on the subject of

PUERPERAL ECLAMPSIA, WITH SPECIAL REFERENCE TO TREATMENT.

The speaker said that at the Geneva Congress last year, M. Charpentier, a distinguished honorary Fellow of the Association and a recognized authority of high standing, gave expression to certain views regarding the treatment of puerperal eclampsia, especially as to the applicability of the induction of premature labor for its relief, which were so at variance to those which the speaker had been accustomed to harbor, and the soundness of which he had so frequently tested that he held no doubts concerning them. He had been greatly surprised that the views then brought forward had remained unchallenged. He thought that in the interest of professional progress and science these opinions of Charpentier should be opposed. His own observation and experience extended over a period of many years, and in the application of the principles advocated a measure of success had been obtained which did not present itself under a contrary method previously pursued.

The speaker said that it is a matter of great regret that we are still in doubt as to the pathogenesis of puerperal eclampsia. We are even forced to deny that it is a pathologic entity, and to affirm that it is but a group of symptoms which has been named "eclampsia" for the sake of convenience, or for the want of a better term. We are prepared to assert, as a result of progress already made, that it is not of hysteric, epileptic, or apoplectic origin; *i.e.*, that it is not produced in the human economy except in the pregnant or puerperal state. We might go further, and if possible agree that the convulsions are reflexes excited by cerebrospinal or medullary irritation of toxemic origin—a toxemia peculiar to pregnancy that has no parallel except during gestation.

After discussing in detail the probable causes of puerperal eclampsia, the speaker summed up as follows:

1. Though the pathogenesis is unsettled, it belongs solely to the pregnant, or puerperal state. It is not apoplectic, epileptic, or hysteric in character.

2. It depends upon toxemia due to over-production of toxins and under-elimination by the emunctories.

3. These toxins probably have their origin in the ingesta, in intestinal putrefaction, in fetal metabolism—one or all, and there is coexisting sluggishness and impairment or suspension of elimination.

4. When the prodromes of eclampsia appear the kidney should be interrogated as to its functions, and all symptoms carefully watched.

5. Treatment is (*a*) preventive, and (*b*) curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric.

6. Milk diet and distilled water should be given during the pre-eclamptic state in order to dilute the poison, hasten its elimination and nourish the patient.

7. Blood-letting should be employed only in cases of plethora or cyanosis. It is liable to cause anemia if persisted in or repeated, whereas red blood-corpuscles must be conserved, not wasted. Glonoin diminishes vasomotor spasm, hence may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control the convulsions.

8. Eclampia is the expression of a further maternal intolerance of the fetus; hence, as a primal measure, the uterus should be speedily emptied of its contents.

9. Medicinal treatment alone is a delusion, and when relied upon exclusively is fraught with danger, both to mother and fetus, whereas, in the prompt induction of labor is found a rational application of science to a desperate condition.

10. Finally, the induction of premature labor presents, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxemic disease possessing a high death-rate.

In the discussion following the reading of this paper, DR. JOHN M. DUFF of Pittsburg said, in regard to the bringing about of premature labor in cases of eclampsia in which albuminuria is present, conscientious practitioners will not hesitate, although in exceptional cases careful attention to medicinal treatment will cause the albumin to disappear, and the patient will go on to normal labor. As a diuretic, he had obtained the best results from the use of milk as hot as could be taken by the patient with a spoon.

DR. H. W. LONGYEAR of Detroit said that the subject is one of extreme importance, and that he had been surprised that the essayist had not mentioned the necessity of inducing premature labor before the occurrence of eclamptic symptoms. Such treatment appeared analogous to snuffing out the light of a fuse after an explosion had occurred. Premature labor should be brought about, in his opinion, in every instance in which a daily examination of the urine shows a constantly increasing amount of albumin, with prodromal symptoms of toxemia. He had induced premature labor twice during the past year under these circumstances, the patient in one instance being seven and one-half months' pregnant, and in the other, eight months'. He does not advocate this course merely because albumin is present in the urine, but because of this and the fact that the amount of urea eliminated is constantly decreasing. He considers the treatment by means of hot milk very valuable.

DR. WALTER B. CHASE of Brooklyn said that decrease in the daily amount of urea is a most valuable indication of the probable occurrence of toxemia in these cases. Unfortunately, many eclamptic patients are seen for the first time only when in convulsions, and then the production of premature labor is the single measure that can be relied upon. There are certain cases, however, in which the urine clears after a few days, and in these it is unjustifiable to end the period of gestation prematurely. For his own part, he considers that the best method of stopping the convulsions, especially when arterial pressure is high, is by the administration of veratrum viride. He believes its use to be unaccompanied by danger.

DR. W. H. WENNING of Cincinnati questioned the advisability of producing premature labor under all circumstances in which toxemic symptoms developed. In many instances if the os is rigid and not dilated there is danger of bringing on convulsions if the obstetrician attempts to dilate. He thinks the psychologic element is an important one. He related the history of one patient who presented no symptoms whatever of toxemic infection, there being no albuminuria or edema present, but who died shortly after the birth of her child. Another patient feared that her child might be born before the expiration of nine months from the date of her marriage, and was in a state of constant nervousness on this account. When labor finally occurred forceps had to be employed. The patient soon developed a condition of marked apathy and would pay no attention to her child. On six different occasions she had a convulsive seizure immediately after the physician's visit and just as he was leaving the house, but each immediately ceased upon his being recalled. The patient finally died, there having been no true symptoms whatever of toxemia.

DR. STOVER of Amsterdam, N. Y., said that the essential point in these cases is how surely and certainly, and how soon, can the condition of puerperal eclampsia be diagnosticated? He spoke in strong terms of the importance of a daily analysis of the urine. If called to see a patient late in the progress of the case the urinalysis may present entirely different features from that in the beginning. He knew of three cases occurring during the past three months in which the attending physician had waited for more marked symptoms to occur after albuminuria had developed, and each of the patients died. He thought the method of Etheridge of Chicago, probably a modification of that of Paget, of estimating the amount of urea, a very valuable one. The speaker referred to a case which came under his own observation in which but 500 grains of urea was excreted daily when there should have been 1300, the patient developing eclampsia.

The PRESIDENT said that he has found that the occurrence in females, during early life of exanthematous fevers,

has a marked influence upon subsequent renal insufficiency. In more than one instance he has been able to trace this insufficiency to an attack of scarlet fever, or diphtheria, occurring during childbirth. The question of puerperal eclampsia is no nearer to settlement than it was fifty years ago. The pathology of the condition is shrouded in darkness, and a step forward would be for the larger medical associations to institute a regular series of investigations with the hope of determining its cause.

In many of the worst cases premonitory symptoms are not present at all. In his opinion it is unwise to use haste in emptying the uterus, when this has been determined upon, as there is great danger of lacerating the parts. The question of the advisability of inducing premature labor in the case of a patient who, in a former gestation, had eclamptic attacks, but in whom at the time of the subsequent pregnancy no symptoms of toxemia were present, is an important one. He has completed the period of gestation in a number of cases of this sort, and thinks such action entirely justifiable, although it is not to be denied that a woman may go through a number of pregnancies normally before a second series of eclamptic attacks occur.

DR. LONGYEAR asked if the speaker advised the induction of premature labor under these circumstances if there were no symptoms whatever of renal insufficiency.

THE PRESIDENT replied in the affirmative and reported the history of a case in which he had practised it.

DR. RUFUS B. HALL of Cincinnati said that such a doctrine is an extremely dangerous one, and that he opposed it strongly. Merely because a woman at some previous time had had eclampsia was not sufficient reason for terminating gestation prematurely when no symptoms of toxemia were present.

In closing the discussion, DR. POTTER said the occurrence of albuminuria is a danger signal, but that decrease in the daily amount of urea excreted by a pregnant patient is still more valuable as a diagnostic sign. The question of the previous occurrence of exanthemata, referred to by Dr. Ross, was of extreme importance. The violent production of premature labor is never justifiable. If eclamptic attacks occur some time previous to labor. the physician may take time in emptying the uterus, but in the *intrapartum* variety, the cervix should be carefully dilated by means of a steel dilator and the hand, and, if necessary, forceps applied and the fetus delivered, He has accomplished this within three hours, when the cervix was rigid, without lacerating the tissues, and has saved the life of both mother and child.

THE PRESIDENT asked Dr. Hall if another physician came to him and said that he was afraid to have his wife go to term on account of having had eclampsia during a previous pregnancy, if he would advise terminating the course of gestation at once?

DR. HALL asked if the President meant for him to give such advice if no kidney lesion was then manifest, to which the President replied that the only symptom of kidney insufficiency was the presence of albumin in the urine. Dr. Hall replied that he would never give such advice under the circumstances, and thought such a course unjustifiable. Symptoms of eclampsia must be present before he would advise interference, no matter what the previous history of the patient might be.

The next paper, entitled

PUERPERAL DIPHTHERIA,

was read by DR. H. W. LONGYEAR of Detroit. The essayist said that the Klebs-Loeffler bacillus is a potent factor in the etiology of puerperal infection, and cited six cases in proof of the statement. The diphtheritic character of each case was determined not only by clinical evidence, but by bacteriologic examination made by the bacteriologist of the Detroit Board of Health. Five of the patients recovered and one died, the one death being the only case in which antidiphtheritic serum was not used. He recommends bacteriologic examination in all cases of puerperal infection, condemns curetting in all cases where a membranous exudate is present, and the use of the antidiphtheritic serum, the intra-uterine application of a strong solution of iodin and carbolic acid at the beginning of treatment, drainage of the uterus by a tube, intra-uterine irrigation with antiseptic solutions, bi-hourly vaginal injections of hydrogen peroxid, and the usual supporting treatment with quinin and whisky. In mixed cases of Klebs-Loeffler and streptococcic infection he recommends, first, the use of the antidiphtheritic serum, and then, after twenty-four or forty-eight hours, the use of the antistreptococcic serum.

He believes that the true character of this form of infection has not heretofore been recognized, but that it will be found to be more or less prevalent in all localities in which diphtheria exists, if sufficiently careful examinations are made. The physician and midwife are warned to use especial care in such localities, as the *post-partum* parturient canal furnishes the most favorable soil for the growth of the Klebs-Loeffler bacillus. In one of the cases reported, patches of pseudomembrane were present on the vaginal walls when none was present in the throat, and a bacteriologic examination of the membrane demonstrated diphtheria bacilli in great numbers. The speaker deplored the use of the sharp curette in cases in which toxemic symptoms developed, as by its use new channels of infection are opened. The dull curette may be used with advantage in the hands of a skilled operator. If diphtheria prevails in the neighborhood of the patient it is wise not to wait until a bacteriologic examination reveals the exact nature of the infection, but to employ antidiphtheritic serum at once, as no harm will have been done if the condition proves to be due to invasion by streptococci. He is in favor, also, of washing out the vagina every two hours with two drams of full-strength hydrogen peroxid.

(To be continued.)

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held June 16, 1897.

THE President, CHARLES L. DANA, M.D., in the Chair.

DR. H. L. TAYLOR reported a case of transverse fracture of the femur above the knee-joint and exhibited a

skiagraph showing the lesion. The patient, a girl, eleven years of age, came to the Hospital for Ruptured and Crippled with a history of having fallen in such a way that the knee was doubled under her. She was helpless after the accident, and was confined in her bed for two weeks. When seen at the hospital, examination showed some swelling just above the joint, but there was very little tenderness. The angle of greatest extension was 155°, but flexion was normal in extent and free from spasm; from this fact it was evident that the knee-joint was unaffected. A ridge across the bone, not far above the joint, due to the forward projection of the upper fragment, could be felt distinctly and the diagnosis of diastasis of the lower epiphysis of the femur was made. A skiagraph of the injured limb showed that the injury was a simple transverse fracture of the lower end of the femur, considerably above the epiphyseal line, with impaction posteriorly. The case was reported to illustrate the value of the skiagraph in diagnosis.

DR. S. H. DESSAU remarked that in a recent discussion Professor Keen had expressed the opinion that not much reliance is to be placed on skiagraphs, especially in fractures of the radius, because they may not show the fracture well even when the surgical signs are very plain.

DR. E. S. PECK said he did not see any ground for such a positive statement on the part of Dr. Keen. Personally, the speaker had seen several very admirable pictures of fractures at the elbow-joint in which the small fractures of the condyles were very beautifully shown, and he considered skiagraphs of immense importance in diagnosis.

DR. J. H. FRUITNIGHT asked Dr. Taylor if separation at the epiphyseal line was of frequent occurrence.

DR. TAYLOR replied that it was extremely rare and that he had been interested to investigate the case reported on that account.

THE PRESIDENT said that the case brought to his mind one which was interesting in connection with skiagraphy. A woman about thirty years of age had come to his clinic suffering from a progressive atrophy of the hand and forearm. She was a dressmaker and had been forced to give up work on account of the disability. When she was ten or eleven years of age she had had a fall and sustained an injury of the elbow, but no fracture. She apparently got over this, and was perfectly well until four or five years before she presented herself at the clinic. At that time she began to notice a numbness of the little and ring fingers, and, later on, pain developed. When the patient was first seen the hand and forearm presented the appearance of a progressive muscular atrophy, the intrinsic muscles and ulnar distributions being affected. There was some anesthesia over the distribution of the nerve, however, and this, together with the absence of fibrillary contraction, made the speaker exclude progressive atrophy. As there was a history of an old injury, she was sent to Dr. B. F. Curtis, to see if he could find anything that would justify an operation, He reported that he was unable to discover anything which would account for the trouble, and advised that a skiagraph be made of the arm. Two pictures were taken from different points of view, and these showed a distinct exostosis on the internal condyle. Dr. Curtis then cut down upon the ulnar nerve, and found that it had become pressed upon where it passed over the condyle, and that the constant irritation thus produced had caused a perineuritis and a fusiform enlargement of the nerve. He pulled the nerve out of its natural position back of the condyle and put it in front, so that it would no longer be irritated when the arm was flexed. Since the operation the patient had steadily improved, the pain and numbness have disappeared, and the woman has gone back to her work.

DR. TAYLOR said that the flexion of the leg in his case was due to the faulty position in which union had taken place before he saw the patient, and which could not be overcome without operation. He would advise that later the bone be divided by the chisel and the deformity corrected. In regard to Dr. Dessau's remark, the speaker had only that day seen a skiagraph of a forearm, showing the line of fracture with great distinctness.

DR. A. R. ROBINSON reported an unusual case of chicken-pox in an adult. The patient, a man of thirty, was first seen on Sunday, at which time only a few spots were visible. On Wednesday he was covered from head to foot with the eruption. The speaker asked if any of those present had ever seen a similar case.

DR. J. BLAKE WHITE said he had once seen a case of chicken-pox in an adult, and that the eruption strongly resembled that of smallpox. The umbilication was very marked.

DR. S. N. LEO remarked that he had seen cases of varioloid which resembled chicken-pox. He remembered one case in particular in which he had made a diagnosis of varioloid. The patient was a woman who kept a boarding-house. The case was reported to the Board of Health, and an inspector was sent to the house, who pronounced the disease chicken-pox. The patient placed the speaker in a very unpleasant position by threatening to sue him for making a wrong diagnosis, by reason of which her boarders had left her, thus causing her financial loss. Within a month he learned that two of the boarders, who had gone to different parts of the country upon leaving the house, had been attacked with a very severe form of varioloid. The speaker thought this case worthy of being placed upon record.

DR. FRUITNIGHT said that in children it was quite common to see chicken-pox which resembled smallpox. One is not apt to suspect chicken-pox in an adult, but the fact that it does occur at times should put us on our guard against making a diagnosis of smallpox too hastily.

DR. ROBINSON thought there would be no special difficulty in making a differential diagnosis if there were a sufficient number of lesions present. In the beginning of smallpox, one never sees vesicles such as are found in chicken-pox.

DR. E. S. PECK reported a case of mastoid disease in a child two years and two months old. The child had had a discharge from the right ear for eight weeks, and had been under the care of a homeopathic physician. During all this time, and in spite of the fact that at one time the child was in coma for several hours, neither

meningitis nor mastoid disease was suspected, and the child's temperature had not been taken for six weeks, although at that time it was 102° F. When the speaker first saw the child, the entire right side of the head, from the vertex to the jaw, was occupied by a swelling. The mastoid was immediately trephined, and from twenty to twenty-five drops of pus evacuated.

DR. R. A. MURRAY thought that patients with ear trouble should be warned of the risk they run in allowing it to go untreated, and referred to a case of a young man whom he knew to be suffering from ear disease, and who was seized with a convulsion and died of meningitis as a result of the former disease.

DR. PECK agreed with the preceding speaker and said he had a patient who for years had had ear trouble. It was a matter of astonishment to him that the mastoid had not become involved, for a probe could be passed up into the cells. The ear now gives but little trouble, probably because the patient has taken good care of herself in the way of avoiding cold and draughts.

DR. R. H. GREENE then read a paper, entitled,

SYPHILIS OF THE KIDNEY.

The paper was based upon the recorded results of the pathologic changes observed in the kidney after death in individuals suffering from syphilis at the time of death, or in whom syphilis was given as the cause of death. Few morbid changes are found *post-mortem* in the kidney which are distinctly indicative of syphilis, with the exception of syphilitic gummata, which are very rare. Syphilis, however, may be said to be directly or indirectly the cause of (1) parenchymatous nephritis; (2) interstitial nephritis; (3) gummatous nephritis, and (4) amyloid nephritis. One or more of these conditions may exist simultaneously, or follow each other, in an individual.

Parenchymatous nephritis occurs in syphilis as it does in other infectious diseases, and the symptoms do not differ. It is most apt to develop during the first few months while syphilitic lesions are present upon the skin or mucous membranes. The prognosis is favorable.

Interstitial nephritis may occur shortly after infection or late in the disease. Interstitial lesions of the kidney have been found in infants suffering from congenital syphilis. It usually affects both kidneys, and is very apt to occur in those affected with syphilis late in life.

Although gumma are rarely found in the kidney after death, there is reason to think that gummatous nephritis occurs more frequently than is generally supposed. Lobulated kidneys are sometimes found in which the lobulation is due to cicatricial bands which have formed after gummata have been absorbed. In such cases a differential diagnosis may be made from congenital lobulated kidney by the fact that in the former the capsule will be found adherent and dipping down into the cicatricial tissue. Gummatous nephritis, as a rule, attacks one kidney only, and is necessarily associated with some interstitial nephritis. Gummata of the kidney, like those in other parts of the body, are amenable to treatment, and the prognosis is good.

Amyloid nephritis is the most common form of renal disease due to syphilis, and is often found associated with fatty degeneration. The diagnosis may be made by the presence in the urine of waxy casts and by the clinical symptoms.

The treatment of syphilis of the kidney should consist in the administration of the iodids and mercury. The latter should be cautiously prescribed, as in these cases salivation is especially liable to occur on account of the eliminative power of the kidneys being interfered with. The general health of the patient should also be looked after.

The following conclusions were arrived at:

1. That in a small proportion of cases, syphilis attacks, directly or indirectly, the kidneys, causing inflammation of the parenchyma, interstitial tissue, or giving rise to gumma and amyloid degeneration.

2. That any one of these conditions is seldom present by itself, but is usually associated with one or more of the others.

3. The syphilis shows in the various lesions of the kidney caused by it, except the interstitial variety, and even here, occasionally, a proneness to attack one kidney only.

4. It occasionally, by attacking the kidney, may give rise to symptoms which simulate malignant disease or renal calculi.

DISCUSSION.

DR. ROBINSON said he would not expect to find waxy casts in the urine as an indication of amyloid disease of the kidney. He also took exception to the term "syphilitic disease" as applied to the condition of any organ or tissue when there are no longer any syphilitic germs in the system. Syphilis, being a specific disease caused by an organism, can no longer exist when these organisms have left the body, therefore, any changes which occur subsequently should not be called "syphilitic." The term, "irritation lesion," he thought, was a better one to express the affections coming on after the active process had ceased. A sort of dyscrasia exists—there is an increase of the plasma cells and of the connective-tissue corpuscles—a pin scratch will not heal and white patches appear in the throat and mouth on the slightest provocation.

DR. WHITE said that little has been written about syphilis of the kidney *per se* because lesions are seldom found there. This is probably due to the fact that the kidney is an eliminative organ, constantly engaged in throwing off poisons and not absorbing them readily, and also because other organs are so much more prominently involved that the renal lesions are lost sight of. He agreed with the preceding speaker in regard to the application of the term "syphilitic disease" to lesions which follow syphilis. According to Dr. Otis, these should be called sequelæ.

DR. C. A. LEALE was of the opinion that the disease was not uncommon and that cases are often overlooked. He narrated the history of a woman, twenty-nine years of age, who had come to him recently with marked symptoms of kidney disease. She had been married two years and was three months pregnant, and had come to him to

have an abortion performed because her physician had told her she would die if allowed to go to full term. Upon examination she was found to be covered with a syphilitic eruption and showed the usual manifestations of the disease. The speaker considered the kidney trouble directly due to the action of the syphilitic poison and the patient was now under treatment for this disease. He also mentioned another case in which labor was brought on at the eighth month on account of the kidney symptoms. The baby lived and developed syphilis within two weeks. At the age of twelve, the child suddenly became blind, remained so for some time, and, finally, regained its sight under antisyphilitic treatment.

DR. FRANK GRAUER did not believe the disease was of common occurrence. He had seen only three cases of so-called syphilitic gumma of the kidney in the thousand autopsies which he had witnessed. One was that of a young man who had entered Bellevue Hospital with a history of meningitis. A diffuse meningitis with gumma was found, and also a gummatous growth in the kidney. In regard to waxy degeneration being generally confined to one kidney, the speaker said the disease was bilateral in all the cases he had ever seen and was caused usually by tuberculosis or syphilis.

DR. R. A. MURRAY said that syphilis of the kidney was undoubtedly one of the causes of hematuria, and mentioned two cases in which the latter was relieved by the use of inunctions.

DR. FRUITNIGHT referred to a case of hematuria occurring in a young man who had syphilis. Bacteriologic examination of the urine showed that he had tuberculosis.

DR. GREENE, in closing, said he agreed perfectly with all Dr. Robinson had said in regard to the term "syphilitic disease," in fact, he stated in the beginning of his paper that it dealt with diseases of the kidney of which syphilis was the direct or indirect cause. He, however, thought the dyscrasia which follows syphilis could best be described by the term "fibrosis." Gumma is generally considered as syphilis in its active state, although it is a disputed point whether or not the secretion of gumma will give rise to the active disease. It is, in all probability, an intermediate state.

In regard to syphilis showing itself by amyloid changes in one kidney only, the speaker said his views were based upon autopsic observations made on persons who had died of syphilis. Most of these observations had been made by the Germans, notably E. Wagner, who mentioned a number of cases of syphilis of the kidney in which only one of the organs was affected. The speaker expressed the opinion that the same changes might be found as a result of long-continued suppuration or of tuberculosis.

CORRESPONDENCE.

OXYTUBERCULIN.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Replying to a letter addressed to you by S. Bookman, Ph.D., M.A., which was published in THE MEDICAL NEWS of July 31st, I very much regret the personally aggressive manner in which it was written. Such a spirit should never be observed in scientific work, and I shall therefore act as if it did not exist.

With regard to the subject matter itself, I will state that in the paper read before the California State Medical Society I avoided all theoretic discussion as far as I could, and limited myself to a statement of facts as observed by me. The lecture was more historic than argumentative. I referred to the observation of surgeons in cases of laparotomy for tuberculous peritonitis, because it was these often recorded results that led to a theory. Following this theory, a line of investigation was carried out and the facts observed and recorded. It is provisionally of little importance whether the theory which led to the plan of treatment be correct or not; that which is of the utmost significance, however, is: Are the facts correct or has there been an error in the methods? As I stated, "I simply desire to present to you the evidence that I have thus far collected, and to ask you whether you consider it sufficient to warrant further investigation by me and by yourselves in the same direction. The work is not presented as a finished task."

The missing evidence has been far more forcibly and clearly referred to in the editorial of THE NEWS of July 10th than in the letter of Dr. Bookman. The investigation is by no means so simple a matter as he seems to think. A complete investigation would have to be conducted in three directions: (1) Bacteriologic; (2) experimental; (3) clinical. I believe I have established my thesis absolutely with regard to the specifically bactericidal action of oxytuberculin. The experiments have been so frequently repeated and have been watched so carefully by so many of my colleagues that there can be no possibility of error. In the clinical department I have been as careful and as skeptical as possible. My patients have been observed by other physicians wherever it has been possible before, during, and after treatment. Their mode of life has not been changed, they have not received any other medicine except a mixture of codein and syrup of wild cherry now and then when the cough has been very harassing. A few, who had contracted malaria with enlarged spleen, received quinin. The results have come so rapidly in early cases that it was absolutely impossible to explain them in any other manner than by ascribing a specific effect to the oxytuberculin. In the laryngeal cases the disappearance of the trouble has been watched by laryngeal specialists. I have left the second method of investigation, the experimental, to others who may be better equipped for the purpose. There are two lines that would have to be followed in such research:

1. The effect of the oxytuberculin upon the toxin.
2. The effect upon the pathologic condition.

I would suggest that it first be determined, whether or not the oxytuberculin will inhibit the action of tuberculin; and, second, whether it will prevent the development of the injected germ in the guinea-pig, or bring about its absorption after it has developed.

More space than can be allowed me in this response would be necessary to cover the whole ground, I simply desire to state that I have placed my evidence, bacterio-

logic and clinical, before the profession and desire that it be investigated skeptically, but honestly. Should my observations be found to be incorrect, no one would acknowledge the error more readily than I, for what we desire is only the truth.

J. O. HIRSCHFELDER, M.D.

SAN FRANCISCO, CAL., August 3, 1897.

REPLY TO DR. UPSHUR.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of June 24th, I reproduced a portion of your abstract of Dr. Upshur's paper and criticised his invidious comparison of the reports of honorable physicians with the "testimonials" of the dupes and touts of charlatans so freely given to the shameless venders of "cancer cures" and "kidney cures," *sui generis*. I thought the Doctor would see at once that his language was grossly insulting, not only to every physician who had reported the results he had obtained with the "Woodbridge method" of treating typhoid fever, but to every member of the medical profession whose *esprit de corps* makes the word of a medical man on a medical topic infinitely more valuable than that of any layman, and under no circumstances to be mentioned in connection with, compared with, or even contrasted to "the testimonials" of the medicaster and his *gobemouche*, and that he might see the gravity of his offense in its true light, I stated that there had been reported 7857 cases of typhoid fever treated by the method under consideration, with 150 deaths—a death-rate of 1.91 per cent. Instead of accepting my hint and, in the chivalrous spirit for which the gentlemen of his State are noted, promptly apologizing, Dr. Upshur further trangresses by attempting to excuse his utterly unjustifiable language by referring readers to my paper in the *Journal of the American Medical Association* of July 10th, in which are published a few extracts from reports received since I read my paper before the Ohio State Medical Society in May last.

The Doctor says: "I have no personal abuse for Dr. Woodbridge"; but why should others suffer for my offense? *I* am the guilty one. Why should he let *me* escape, and heap such infamy on the brave and noble physicians who so courageously volunteered in defense of a stranger in the hour of adversity? But, Mr. Editor, there have been many amusing incidents connected with this old controversy, in which this new knight has just broken his lance; but his letter will challenge comparison with the best of them all. I have been accused of having *said* and *done* many things which were foreign to my notions and in conflict with my dearest theories. Debators and dissertationists have wasted words and ink in frantic efforts to prove that statements which I have *never* made should never have been uttered, and that claims which I have *never* advanced should never have been made. But the palm of victory belongs to the writer who "begs space for correction" of my "inaccurate statements" in the current number (July 31st) of THE MEDICAL NEWS, who says: "I protest that I shall not be misrepresented as having 'sanctioned' the use of phenacetin," etc.; who says, "Why does he take part of a sentence and make me 'sanction'," etc., and who then launches out in an effort to prove that he does not use or advise the use of phenacetin in the treatment of typhoid fever.

Now *I* protest that in the article which he is correcting I was *not* "inaccurate"; I did *not* misrepresent him; I did *not* make him "sanction the use of a remedy" which he had not himself "sanctioned." If the words "such preparations as phenacetin, etc., may be used in small doses," does not *sanction* the use of phenacetin, what were they put in the paper for? In this, Dr. Upshur seems to be quibbling in order to distract attention from the insult he has offered the medical profession and for which he will, if he be a gentleman, avail himself of the earliest possible opportunity to apologize.

The closing sentence of Dr. Upshur's letter is a *non sequitur*. The treatment which will give, in the safest and easiest way, the largest percentage of recoveries, with the smallest percentage of deaths, as well as the shortest duration of the mildest illness and the quickest restoration to the most perfect health, will need no other commendation.

That all of these results are best attained in the disease indicated by the method of treatment under consideration, is amply proven by the commendations of the physicians who have used it and by the following statistics: Number of cases of typhoid treated to date, 8639; number of deaths, 161; death-rate, 1.85 per cent.; average duration of illness in 5511 cases, 12.9 days.

JOHN ELIOT WOODBRIDGE.

CLEVELAND, OHIO, August 10, 1897.

REVIEWS.

TRANSACTIONS OF THE EIGHTEENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION. Held in the City of Pittsburg, Pa., May 14, 15, and 16, 1896. New York: D. Appleton & Company, 1897.

THE extensive program of this meeting, comprising as it does thirty-four papers, not including the theses of the candidates for membership, proves, in the words of the President's address, that it is quite possible to have for a scientific organization a congress of the first class in a city of the second class.

Among the papers of general interest, that of Dr. Carl Leiter on "Prophylaxis of Nasal Catarrh" is worthy of notice as a valuable contribution to a subject of great practical importance. As indicated in his remarks, cleanliness, not only of the whole body, but of the nasal cavities in particular, whether a cold in the head is present or not, is the primal and most important propyhylactic measure which can and should be instituted to prevent recurrence of acute coryza; to prevent, finally, systemic infection by ingestion of putrefactive products. As important as this nasal cleansing, is the proper feeding and clothing of children, so that overheating of the general system may be avoided, and the skin, especially around the neck and arms, should be so hardened by cold-water applications, in the form of sponging morn-

ing and night, that moderate exposure will not readily give rise to acute coryza. The suggestions deserve to be followed, even if we may be inclined to consider the author's judgment on the condition of the American child as too severe. There will be some dissent from the generalization that the children are, as a rule, too much clothed, too much confined indoors, and overfed with heat-producing food, so that when they leave the nursery they are mere hot-house plants, and that it takes a long course of out-door sports with boys to inure them to exposure, with a number of the after serious effects of exposure, upon the respiratory organs in particular, to make them strong and healthy.

The relation of acute diseases of the nose and throat to disorders of digestion is well treated by Dr. Moreau R. Brown, while Dr. T. R. French supplements this paper with a consideration of chronic conditions of this sort and their results. The sequelæ of syphilis, nasal, pharyngeal, and laryngeal, and their treatment, are discussed respectively by Drs. C. H. Knight, J. E. H. Nichols, and W. K. Simpson.

THE DISEASES OF THE STOMACH. By DR. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin. Translated and edited by MORRIS MANGES, A.M., M.D., Assistant Visiting Physician to Mount Sinai Hospital; Lecturer on General Medicine at the New York Polyclinic. Second revised and enlarged edition. New York: D. Appleton & Co., 1897.

THE recent great advances in the knowledge of diseases of the alimentary tract, particularly of the stomach, have necessitated a new English edition of Ewald's book. This is rendered more readable by the abandonment of the style of the first edition, in which the chapters were in the form of lectures.

We note particularly the greater minuteness in the details of the examination of stomach contents; the recommendation of Uffelmann's test for lactic acid and that of Töpfer for free hydrochloric acid, and the doubt expressed as to the merit of the biuret reaction. Meltzer's experiments showing the non-contractility of the fundus of the stomach to the faradic current are thoroughly discussed, and the conclusion that we cannot judge why gastric faradization benefits some people is reached. The author and the translator disagree as to the value of palpation of the stomach tube *in situ*, the former doubting its worth, the latter believing it to have merit. The advantages and disadvantages of gastrodiaphony are thoroughly considered. Turck's work on the infection of the gastric mucous membrane from the mouth and pharynx is referred to.

The book is thoroughly modern and is a safe and sound exposition of the diseases of the stomach. The editing is splendidly done and the English is above reproach. The book is well printed and well bound.

PRACTICAL PATHOLOGY FOR STUDENTS AND PHYSICIANS. By ALDRED SCOTT WARTHIN, Ph.D., M.D., Instructor in Pathology, University of Michigan. A Manual of Laboratory and Post-mortem Technic, designed especially for the use of Junior and Senior Students in Pathology at the University of Michigan. Ann Arbor, Michigan: George Wahr, 1897.

NO apology is needed for a good, reliable and practical book in English on laboratory technic, but when such a book is intended as a guide to the student, it must at least be accurate. This is not always the case in the work before us, which is mostly a compilation of the more important and commoner methods of laboratory technic.

Part I. deals with the directions for performing *post-mortem* examinations and occupies one-half of the book. Rokitansky's method for opening the heart is given. This is undoubtedly the best method for the examination of this organ *in situ*, but a few well-chosen illustrations would be of great benefit to enable the student to understand this procedure. The directions given for obtaining uterine curettings is entirely out of place in a book of this kind.

In Part II. the student is told how to preserve, fix, harden, imbed, cut, and stain specimens, and the various methods of examining bacteria in fluids and in cut sections are given. The specific stains for inflammations and degenerations are also stated, and a chapter is devoted to the examination of the blood. Some of the methods are not clearly stated, as for instance, the mounting of paraffin sections. On one page we are told that the Klebs-Löffler bacillus is stained by Gram's method; further on, that it is not, and the student is left to decide the matter. This and other errors should not have crept in. However, the book may be consulted for many formulas and methods of daily use.

THERAPEUTIC HINTS.

Nutrient Enemata.—In many instances a nutrient enema composed only of whisky and peptonized milk will not be retained by the patient. A better combination, and one which will give more satisfactory results, is the following:

℞	Beef peptinoids	℥ ii
	Yolk of egg	No. I
	Whisky	℥ ss
	Tr. opii	*m.* v–x
	Salt. q. s.	
	Peptonized milk, q. s. ad.	℥ vi.

A Sedative Syrup.—An excellent sedative combination in cases of insomnia or mild delirium, is the following:

℞	Chloralis	℥ iss
	Sodii brom.	℥ iii
	Ext. cannabis ind. } aa	gr. iss
	Ext. hyoscyami }	
	Syr. simp., q. s. ad.	℥ iii.

M. Sig. Tablespoonful, to be repeated if necessary after an interval of four hours.

A Palatable Method of Administering Castor Oil.—In the case of children who object to taking castor oil the dose may be made much less disageeable if the oil is combined with glycerin and tincture of cardamon, as follows:

℞	Ol. ricini	℥ ss
	Glycerini	℥ iii
	Tr. cardamonii comp.	℥ i.

M. Sig. One dose.